ARCHITECTURE

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Charles Z. Klauder

By Rayne Adams

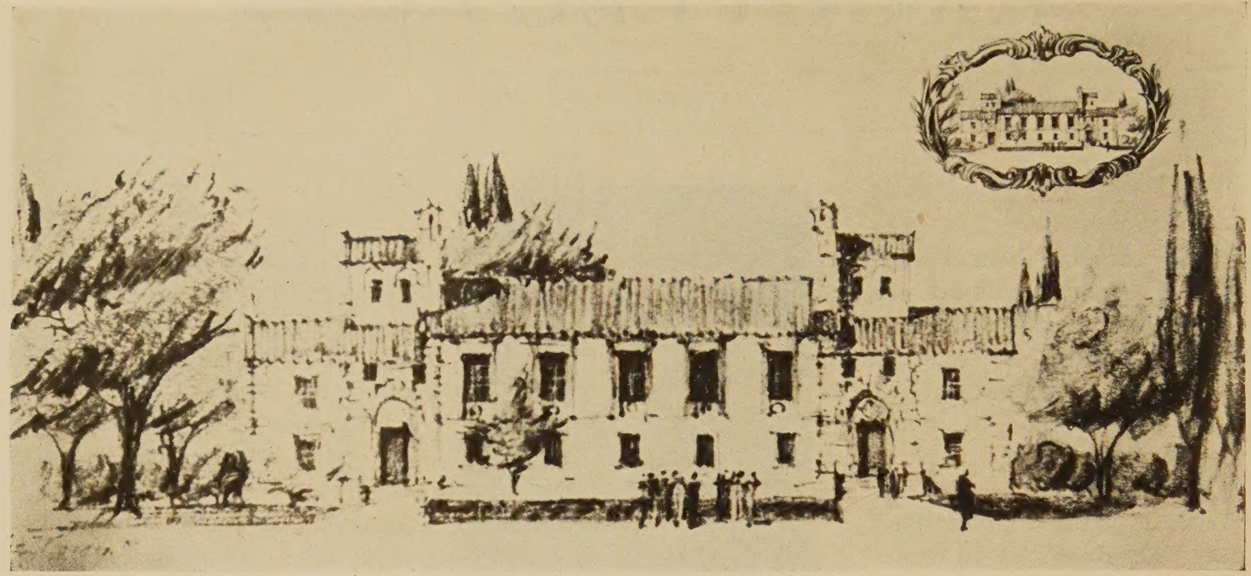
WHEN Michael Angelo painted the frescos of the Sistine Chapel, he created a new race of men. That, at least, is the opinion of many. As a matter of fact, what he did was to furnish us with a symbol for classifying mankind. I may be quite wrong in thinking so, but it seems as though the old fashion of classifying men as sheep and goats is helpful, though it isn't exact. The classification does not imply any denigration of those who are classed as one or the other. Men are not lazy *or* active; they are both—and neither. Still, in the unreal world in which we live, the signposts have to be brief, if they are going to be read at all.

In his book on Shakespeare, Hugo lists his ten great men. It is interesting to note that they all share the dynamic qualities which characterized Hugo himself. Marcus Aurelius, it may be noted, is not among them. We choose our great men because we feel a peculiar kinship. And so it seems to me that those who follow the arts are to be found either in the camp of Michael Angelo or in that of Leonardo. I ought to add that there are many who would insist that neither the smouldering Angelo nor the Olympian da Vinci is more than a mere name, signifying little or nothing.

So far as Klauder is concerned, it is Michael Angelo who holds the key of Heaven. And in attempting to understand the character of Klauder's thought with respect to architecture, it has seemed to me that his downright acceptance of the frescos of the Sistine Chapel as the supreme expression of æsthetic genius gives a clue to an understanding. Such acceptance does not mean that, like Angelo, he is given to exaggeration, or to disproportion, nor does it imply even a desire to till the same ground that the master tilled. It does mean that there is a kinship of understanding—that mysterious compulsion which makes the leaf turn to meet the sun. Klauder's long experience as an architect has been one of devotion; the fires of his interest are always smouldering. He draws, much as the prophets of the Old Testament wrote, under direct inspiration. Only their inspiration came from a mythical Sinai, whereas Klauder's comes from the Sistine Chapel.

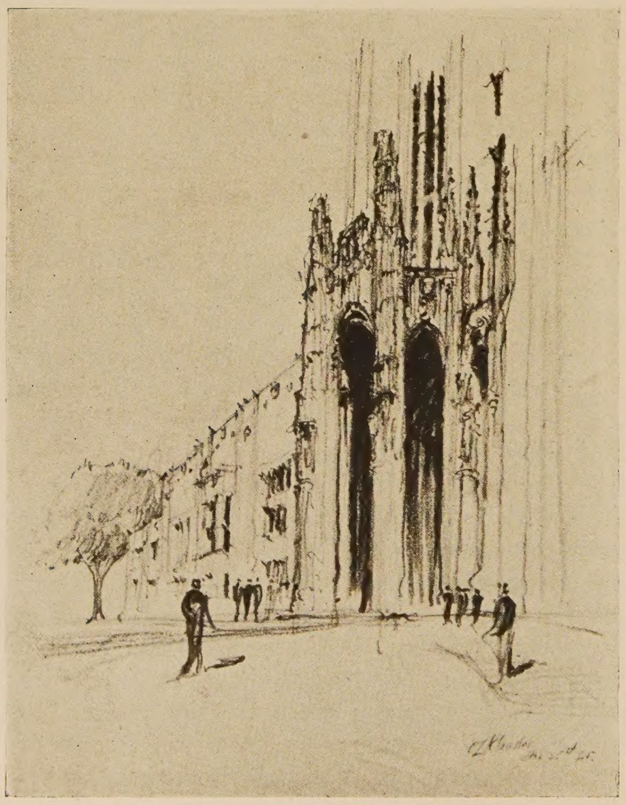
Yet we have to go farther back than Michael Angelo to understand how Klauder works out his architectural conceptions—back to the enchanted days of King Arthur. I don't know whether Merlin ever existed as an individual, but I do know that there have been many real Merlins. Klauder is one of them but, like Hamlet of these latter days, he is a Merlin in modern dress. Merlin worked his wonders with a wand; its counterpart is Klauder's pencil. Merlin gathered his knowledge by poring over the relationship of unrelated things (which is a definition of magic); Klauder has built up a vast storehouse of architectural knowledge by long years of unwearying speculation concerning the ratios and proportions of related things (which is a definition of architecture).

The quality of this speculation is evidenced in Klauder's gift of drawing in perspective: the two-dimensional drawing has for him a sort of noumenal third dimension. And, in his making of them he gives evidence that, had he lived in the sixth century B. C., he would have belonged to the school of Pythagoras. For with Pythagoras numbers were of the essence of things. With Klauder they are of the essence of spatial relationship. You will think that this belief is common among those who give themselves to architectural design. Of course, we all



It is common in Mr. Klauder's office to take one of his tiny pencil sketches as shown in the cartouche above, less than five inches long, and enlarge it photographically, as here to twenty-nine inches long, for further study

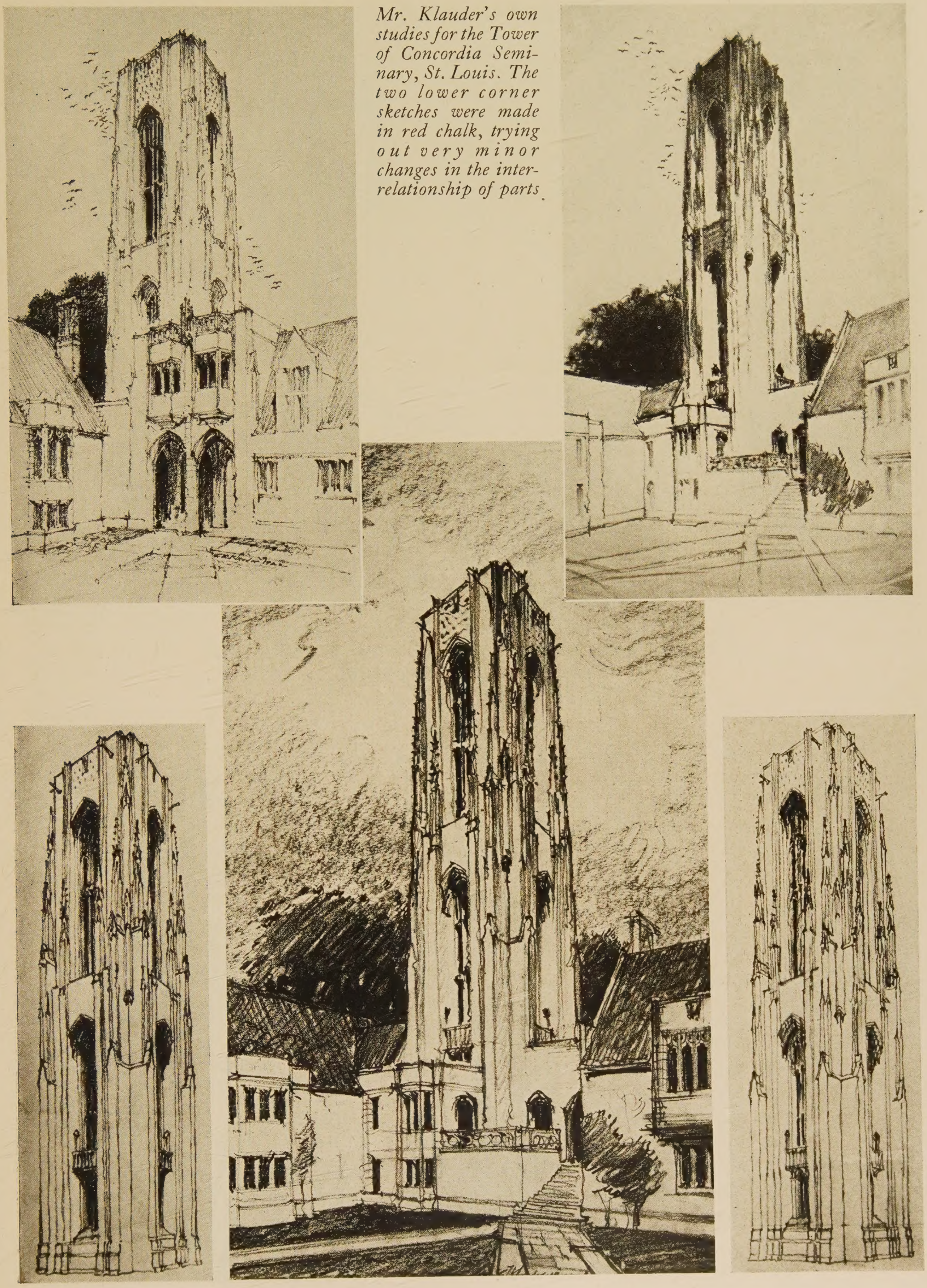
think in terms of dimensions, and we shuffle our walls and partitions endlessly to make the plan "click." But Klauder's sense of dimensional relations is a highly specialized one. Take, for instance, the series of perspective studies of the Concordia Tower. Looking at them casually, one would easily believe that they are simply suggestive sketches which might or might not work out. Yet the small variations of profile are drawn in such fashion that Klauder knows that they can be checked by plan and elevation and that they will work. How? Simply because in drawing them, he thought, with an intensity which is uncommon, of the relative position of his planes with respect to his decorative forms. To many it would seem that this thinking of dimensions—in terms of inches—would blockade the freedom of thought which designing requires. It would, in the generality of men. The secret lies, of course, in the habit of thinking of the dimensional change as an essential aspect of the change itself. As in French the article and the noun are never far from each other in the Frenchman's mind, so the dimensions are coeval in Klauder's thought with the form which his conception takes.



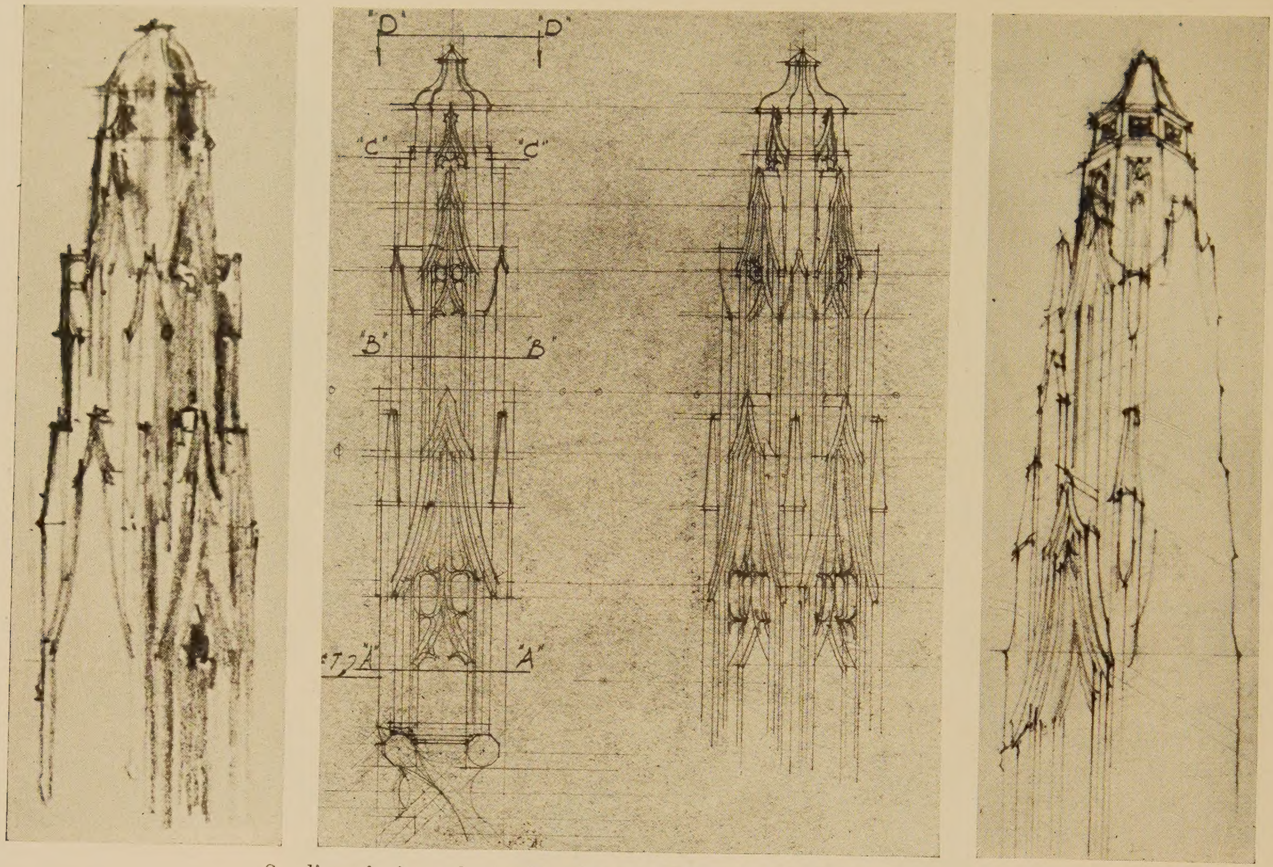
A study in soft pencil on tracing paper such as Mr. Klauder makes in great numbers

With his extraordinary gift of drawing in perspective, it isn't strange to find that Klauder makes no use of clay or plasticine models in studying his work. Of course, this refusal to accept the model as an aid arises from his conscious sense of confidence in his power of visualization; yet it is, I am sure, strengthened by the subconscious knowledge of the forms of architecture which he has found, by trial and error, through many years, to be acceptable to his critical taste.

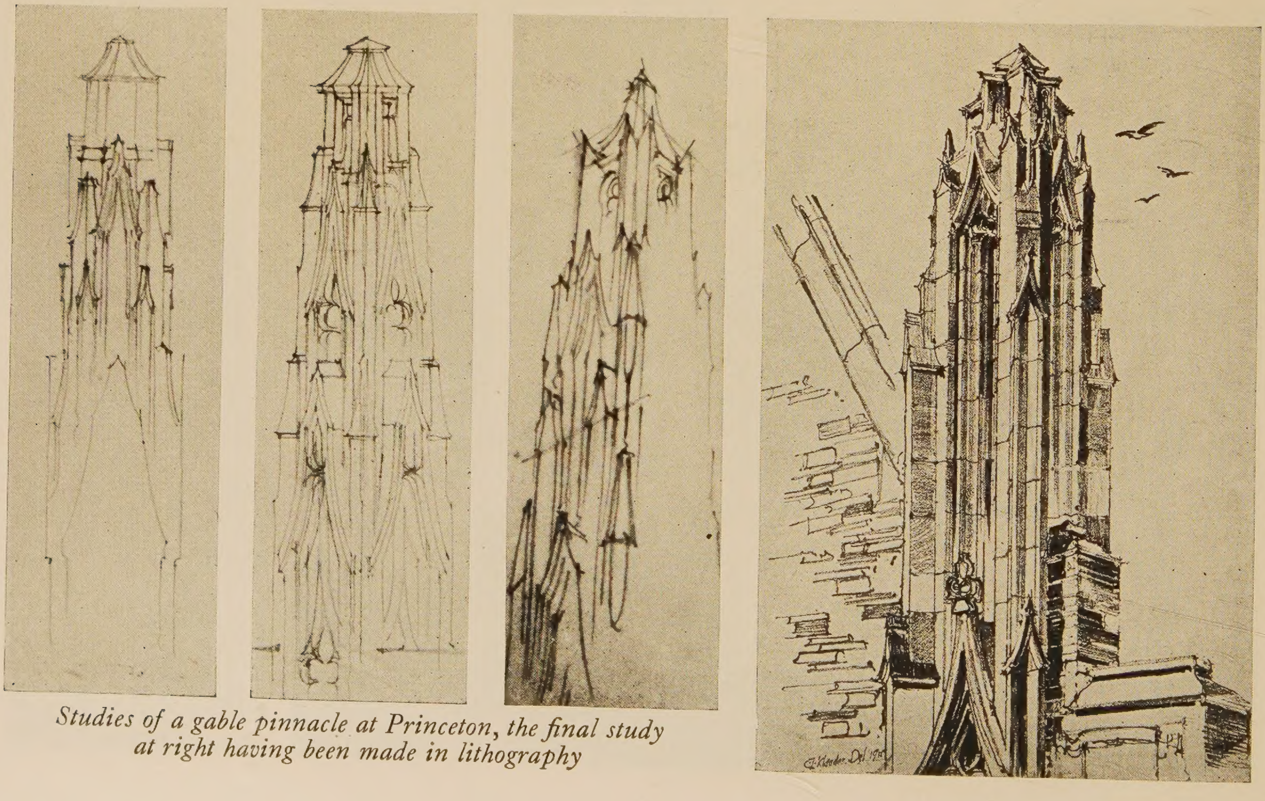
It is in his architectural work designed for academic uses, such as the buildings at Prince-



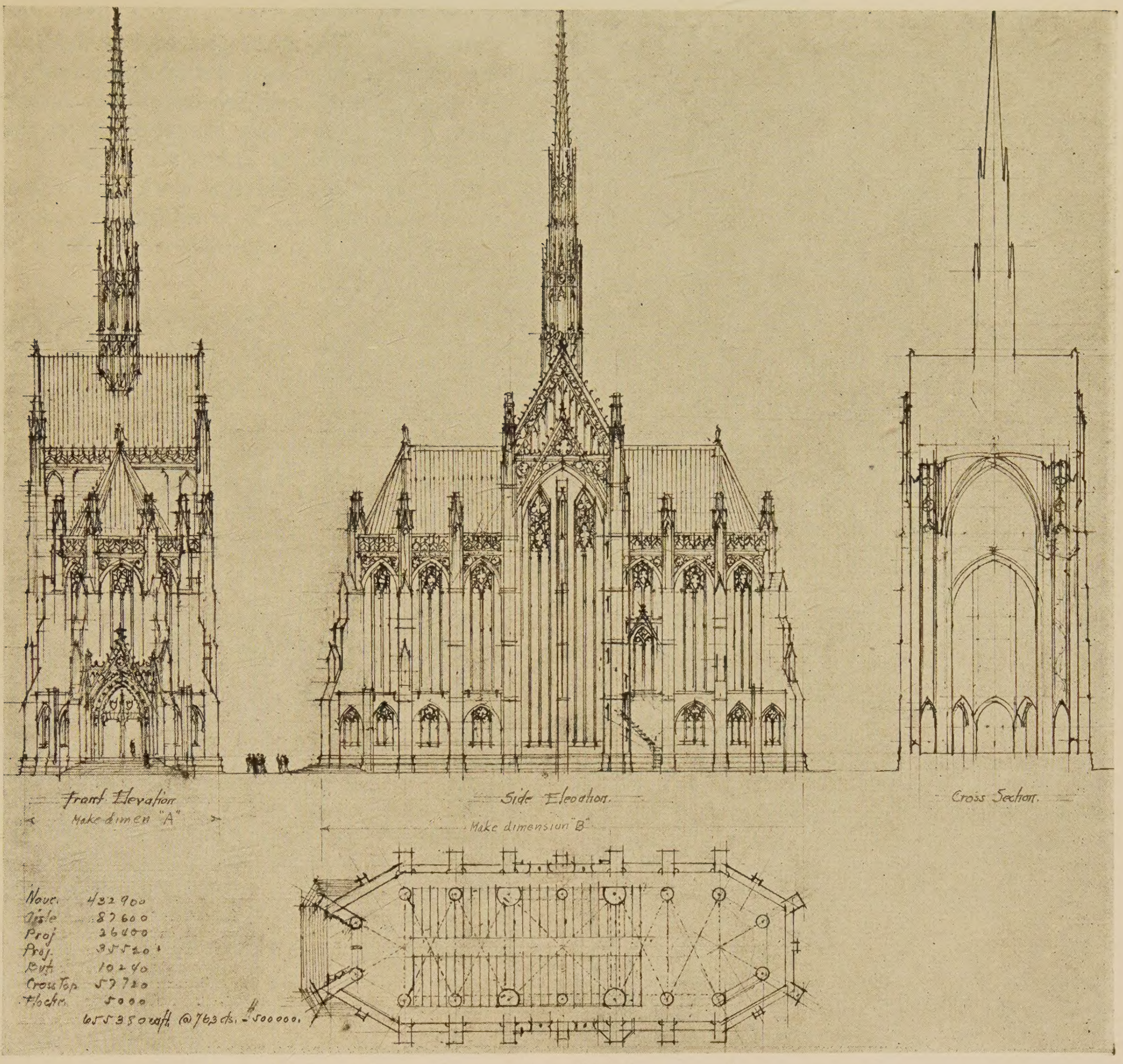
Mr. Klauder's own studies for the Tower of Concordia Seminary, St. Louis. The two lower corner sketches were made in red chalk, trying out very minor changes in the interrelationship of parts.



Studies of pinnacle details, Heinz Memorial Chapel, University of Pittsburgh, drawn by Mr. Klauder as usual in side elevation, diagonal elevation, and perspective



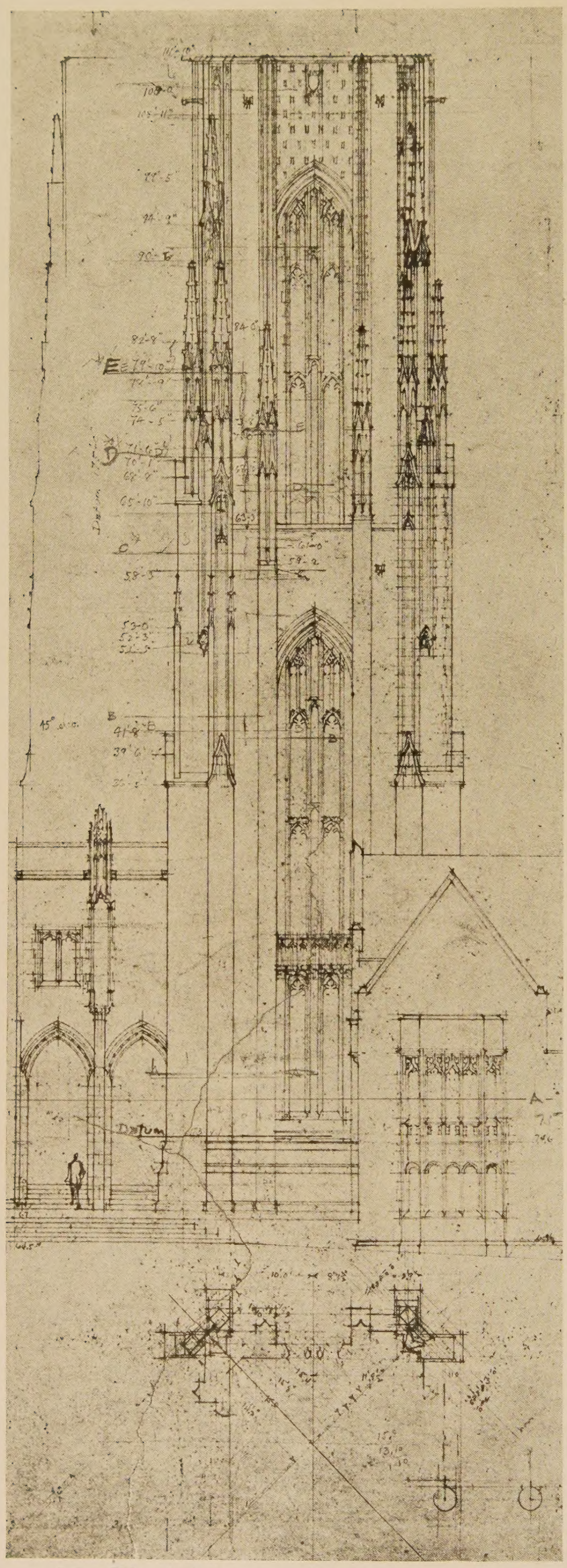
Studies of a gable pinnacle at Princeton, the final study at right having been made in lithography



One of the amazing products of Mr. Klauder's pencil—a design for the Chapel, University of Pittsburgh, which he worked out, at a scale of forty feet to the inch, in two and a half hours in the middle of the night

ton, that Klauder has been most successful, and it is by his mastery of what may be called "non-ecclesiastical Gothic" that he is best known. As his counterpart, Merlin, lived before the innovation of Gothic architecture, so Klauder lives at a time when many architects consider its usefulness outgrown. Just as Merlin's interpretations of the King's dreams may have been challenged, to his perplexity, by other magicians, so Klauder finds his work challenged by adherents of the school of modernist architecture. And this challenge seems strange to him, because he has sought to express the function of the buildings he has designed in fitting materials.

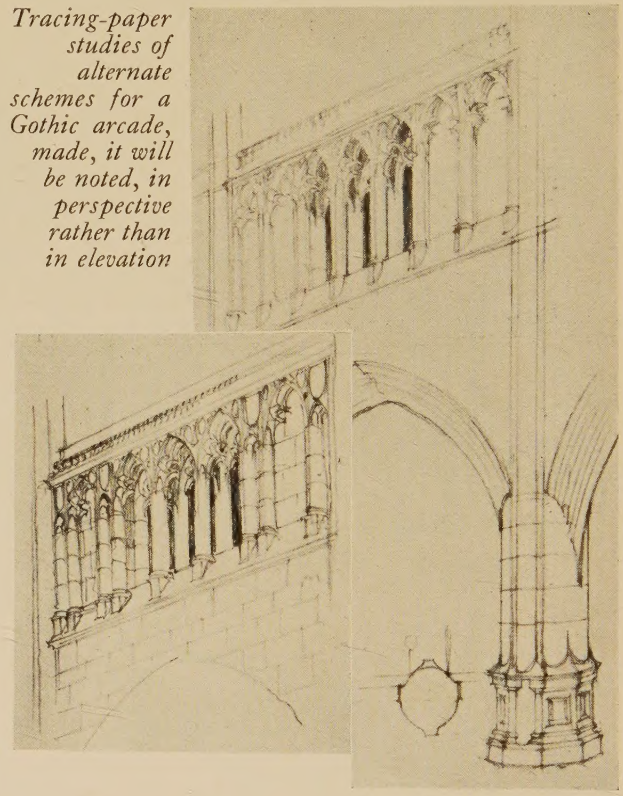
Suppose that a thousand and one materials have been brought into being during the past fifty years by the use of which building may be simplified and cheapened. Just because a man buys a new suit of clothes, he does not necessarily cast out all the clothes he may have possessed up to the time of that purchase. For Klauder, like many others, would rest his case for limestone, I am sure, on the solid ground that no other material has yet been discovered which can quite take its place. It is a simple answer, but it seems complete to me. After all, the modernist exposition concerning function and materials has been, in altered form, the burden of every enlightened architect from the days of Vitruvius to those of Pascal and Viollet-



Mr. Klauder's own working drawing of the Concordia Seminary Tower, characteristically replete with figures

le-Duc. That, historically, there have been architects following in the footsteps of these and other masters, who have failed lamentably to achieve a proper expression of these principles in their work, argues only that the candles they held were too feeble to light their paths.

How then does Klauder work with respect to his drafting-room? It is difficult to answer, except by the general expression: Klauder *is* his drafting-room—metaphorically at least. He is, however, a believer in the apprentice system, and his draftsmen are, if one may say it out loud, apprentices—at least so far as Klauder is concerned. As to his methods of working with his draftsmen, one may cite the characteristic working up of the drawings for the Princeton dormitory pinnacle. The carefully studied small-scale sketches made by Klauder were enlarged by photostatic methods and the enlargements given to the draftsmen for interpretation so they might be ultimately frozen into working-drawings. Yet, throughout the whole process of development, Klauder continues his study. And in spite of the ease with which the innumerable studies seem to flow from his pencil, there is, underlying them all, the sense of travail; something typical of that vague unrest which animated the creator of the Sistine frescos.



Tracing-paper studies of alternate schemes for a Gothic arcade, made, it will be noted, in perspective rather than in elevation

Letters from Louis Sullivan

By Claude Bragdon

AT this late day it is surely unnecessary to begin an essay of this sort with a "Who's Who" of Louis Sullivan, as might have been necessary during his lifetime; for although architecture is so largely an anonymous art, Sullivan is now generally recognized as the great "founder," or rather, precursor of architectural modernism—in so far as that word connotes truthful and rational building.

Charles Harris Whitaker, who persuaded Sullivan to rescue from time that record of his life and thought preserved for us in "The Autobiography of an Idea," thus characterizes the author of it: "If ever there was an intellectual giant that towered above the mass in the splendor of his gifts and speech, Louis Sullivan was that man."

I have reason to know that this is a true characterization, for Sullivan so far honored me with his friendship as to reveal himself freely in the talks we had together. The half of what he told me I did not then understand, for it was "no mortal business, nor no sound that the earth owes," but it has haunted my memory all these intervening years like music. Sullivan's was the most "musical" nature I have ever encountered—not, I hasten to add, in his mundane and personal life, of which, like most men of genius, he made more or less of a hash, but in the sense that Shelley's nature was inevitably musical, even amid the afflictions, persecutions, and gaucheries of his tormented life.

A great deal of Sullivan's talk partook of the nature of music, in that it was stimulating, cryptic, evanescent, leaving the listener in an inspired mood, but without a communicable idea. On occasion he could be clear, definite, pragmatic; bringing to bear on every subject discussed an inescapable and unanswerable logic; but within that fenced meadow of the mind he was never content to remain for long: like some aviator come to earth, it was only the place where he made, as it were, forced landings; his true kinship was with Ariel, and his true home was in that airy element where ideas first spring to life—the intuitive sphere.

Fortunately I have preserved some letters Sullivan wrote me in answer to some questions I asked him, and apropos of an article I had written about him for *House and Garden*, since included in my book, "Merely Players," under the title, "The First American Modernist." This was at an early stage of our acquaintance—the thing that began it, in point of fact. Like his talk, the letters reveal, though in a lesser degree, his androgynous nature: the critical mind, coolly appraising things and people; the ecstatic soul shot through with awe and wonder at the beauty and mystery of ever-unfolding life.

What he wrote me regarding his "Kindergarten Chats," a series of fifty-two essays addressed to draftsmen, will be found quoted entire in my essay, entitled "Louis Sullivan, Prophet of Democracy," in "Architecture and Democracy": Here follows what he had to say about what I had to say about him. Though not altogether flattering to my powers of divination, it is written with evident consideration for my feelings as an author, and the realization that, like the man at the piano, I was after all doing my best.

* * *

"Dec. 23rd, 1903

Dear Mr. Bragdon:

I enclose herewith your ms. after giving it a careful second reading.

I think that the general trend of your article is in the main fair, judicious and well-meaning. Its chief limitation in my mind lies in your not welding entirely together my architecture and my philosophy. This idea should dominate the article: and all comments should spring from this union. This want, to me, disturbs the essay as an organic criticism, which, I take it, was what you intended to produce.

The article has a very sympathetic touch in dealing with the Prudential Building; but I do not find this sense pervading the essay as a whole. These desiderata divide up the article considerably, and I would suggest, if I may, a greater degree of intimacy between the various parts of your theme.

I realize the limitations of a 3000 word article. But we should appreciate seriously, as artists, the tonic value of limitations: they sharpen and concentrate the mind.

This is my feeling in the matter, and I think we will agree that I should so express myself.

I shall be pleased to hear from you at any time when the spirit moves you; meanwhile believe me

Yours sincerely,
Louis H. Sullivan"

Here follows his reaction to the essay after it had appeared in print:

"I have read your article in *House and Garden*. I think well of it except where you persist in throwing mud at my 'Kindergarten Chats' while ignoring their dramatic quality —oblivious of the patent fact that they are *speech*, not written words; and I truly appreciate your 'appreciation.' Your recent articles form a good beginning; but much more remains to be done wherever opportunities ripen. I thank you heartily for your co-operation in what I believe to be a vital and necessary work."

* * *

The December, 1904, issue of *The Architectural Record* contained an article of mine entitled, "Made-in-France Architecture," on the subject of the Ecole des Beaux Arts influence on American architecture which at that time was making itself strongly felt. I must have written Sullivan for his opinion, for I received from him the following reply:

"July 25th, 1904

My dear Mr. Bragdon:

I am somewhat at a loss to give my views on the Ecole des Beaux Arts. The question has never been put to me so directly; and it is now almost thirty years since I entered the school. On the whole, and personally, my view is favorable to the school. On the whole, and as regards others, my view is unfavorable.

I believe I *absorbed* the real principles that the school *envelops*, so to speak—my work has consistently shown this. I can scarcely believe that the others did. Their work certainly gives no evidence of it. It was certainly at the school, and because of the teachings of the school, that there entered my mind, or fructified in my mind, the germ of that law which later, after much observation of nature's processes, I formulated in the phrase, 'Form follows Function.' It was at the school, also, that I first grasped the concrete value of logical thinking; and it is doubtless due to this first impulse that I later developed a scientific system of thought and expression of my own.

Now how much of all this was in the school, and how much was in myself it would be difficult if not impossible to say. But I think I can say this: the school did not give me my *start*. My real start was made when, as a very young child, living much out of doors, I received impressions from the shifting aspects of nature so deep, so penetrating, that they have persisted to this day. These impressions were vivid, dramatic, and vaguely subjective. Hence, I entered the school with a certain fixed mental attitude, at the age of eighteen, and with a certain vague consciousness and will that some day I must inevitably express myself in my own way. French logic doubtless helped to focus this ambition. I am no longer closely in touch with the school, but I understand that its methods have become much broader than they were in my time. However, so far as I can observe, the recent American students return from the school not with a knowledge of first principles, but merely with a collection of clever fads and tricks.

Again, how much of this is due to or can be charged against the school, and how much to the material mind and opportunist temperament of the average American student I am not prepared to say.

I was at the school a much shorter time than many others, but I seem to have learned rather more. Some recent *diplomés* of the school whom I have lately met seem to carry pitifully light mental baggage.

I trust that this statement covers the general scope of your inquiry. I shall be glad to answer further specific questions if you will state them.

Cordially yours,
Louis H. Sullivan”

◆

Evidently I was much given to pestering Sullivan with questions about this and that, but he seems always to have answered with explicitness, and with a patience and good-humor to which I fear I render only a retrospective appreciation. The following letter is of an earlier date than the foregoing, and it is written from that pine-planted, bird-haunted, sea-wind-swept paradise on the shore of Biloxi Bay, the discovery of which he so rapturously describes in his autobiography.

“Ocean Springs, Miss.,
Nov. 8th, 1903.

Dear Mr. Bragdon:

I have your favor of Oct. 31st, and am answering it at the earliest opportunity which has presented itself. That is to say: Sunday. I have twelve men at work on my place here, making much needed improvements which I have been postponing from year to year; and by sundown each day I find myself too fatigued to write.

As to your queries:

I have admired the fervor and masculinity of Richardson's work; but the absence of logic and common sense repelled me later. I doubt if Richardson had much influence on my mental growth—if so I have forgotten it, for that is long ago. In my ‘Kindergarten Chat’ entitled ‘An Oasis’ I pay my tribute to the man.

You are right: Mr. Adler was the ‘outside man.’ I did the æsthetics—Adler was a man of fine mind and excellent heart.

As to my buildings: Those that interest me date from the Wainwright Bldg. in St. Louis. It was with that that I ‘broke’ (see K. G. Chat ‘The Tulip’). It was a very sudden and volcanic design (made in literally three minutes) and marks the beginning of a logical and poetic expression of the metallic frame construction. The Prudential Bldg. is the ‘sister’ of the Wainwright. All my commercial buildings since the Wainwright are conceived in the same general spirit; and I believe my latest, the new Schlesinger and Mayer department store in Chicago (opened to the public Oct. 12th) will interest you. The structures prior to the Wainwright were in my ‘masonry’ period. The Auditorium Bldg. and Walker Bldg., Chicago, are the best of the large ones—the Ryerson, Getty, and Wainwright tombs, among the small.

I contributed an article to *Lippincott's* some years ago, on ‘The Tall Office Building Artistically Considered.’ I will see that a copy is sent you from my Chicago office. . . .

As to ‘what you call your philosophy.’ Alas! I have not formulated it in set terms. It is something to be felt in the heart, perhaps, rather than seen in cold print. It is to be read between the lines of my writings: indeed, it is the sole cause and aroma of those writings—their only excuse for being. I have never tried to make a breviary of it. I might perchance try, some day, but I doubt it—I am not fond of set terms. . . .”

In answer to some questions about the genesis of “Kindergarten Chats,” in this same letter Sullivan launches forth into that lengthy elucidation of them to which I have before referred, and at the end of the seventeenth page he concludes with this (to me) truly touching *cri du coeur:*

"In my time I have had much adulation and abuse galore. What my heart yearns for now is Justice! And a sympathetic interpretation of that which I have loved and for which I have lived. *Voila tout!*

If you have had the patience to read thus far pray have a little further patience and read a little farther that you may learn how greatly I appreciate the interest you have taken, not in me, but in that for which I have stood—and stand.

Very truly yours,
Louis H. Sullivan"

* * *

It is only in the letter which I have reserved for quotation last that Sullivan comes near to the very heart of his mystery, though in our talks together, after we became friends, this aspect of his nature was most in evidence—that strong humanitarian and mystical bias which, as he was never tired of declaring, was at the root of everything which he essayed to do.

Though truly "an intellectual giant," Sullivan not only had no faith in the mind when unconditioned by love and compassion, but he saw in its kingship the greatest menace to humankind: "The intellect, alone, runs amuck, and performs unspeakable cruelties: the heart alone is divine. For it is the heart that welcomes life and would cherish it, would shield it against the cannibalism of the intellect." The burning core of his mystical philosophy was his belief in the essential divinity of man: "For man is god-like enough did he but know it—did he but choose, did he but remove his wrappings and his blunders, and say good-by to his superstitions and his fears."

These quotations from "The Autobiography of an Idea" will be an aid to the understanding of the following letter, evidently written apropos of the reading of my manuscript in its finally re-cast form:

"Jan. 2nd, 1904.

Dear Mr. Bragdon:

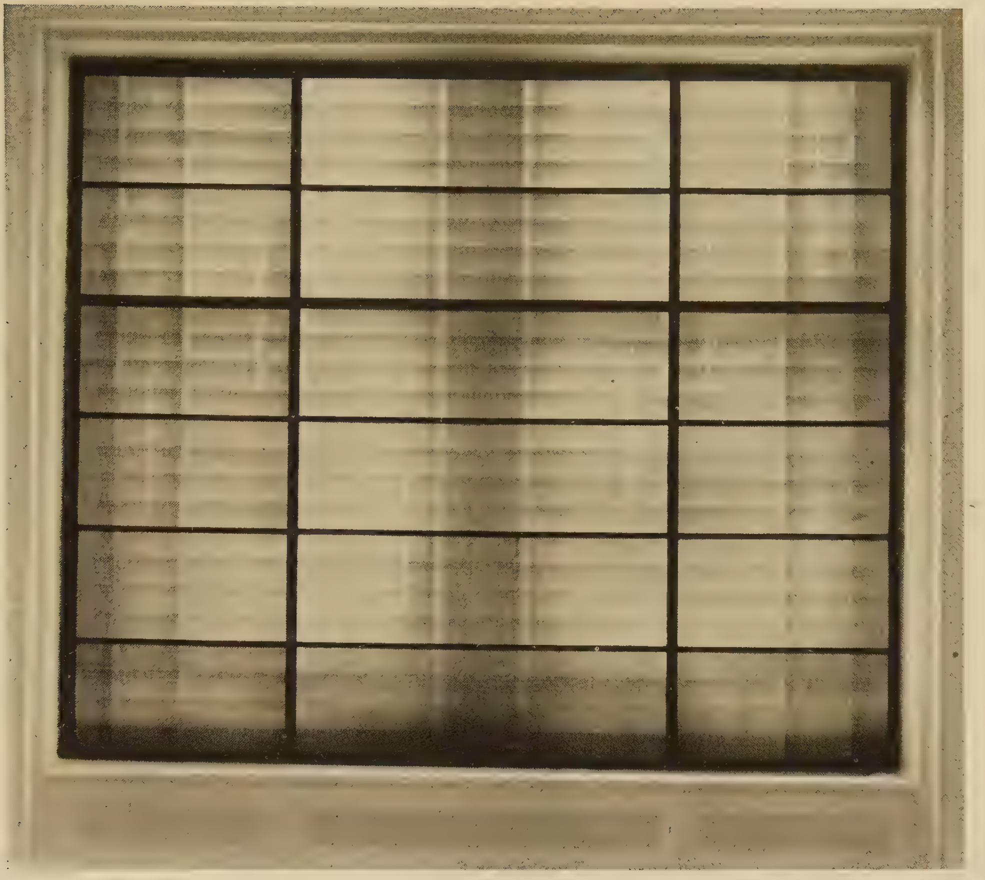
I herewith return your manuscript. Thank you for the pains you have taken in re-casting it. It is now a well-balanced and very readable article and meets with my entire approval as far as it goes. That it should go farther for the time being it would perhaps be unreasonable for me to ask—and I do not ask it.

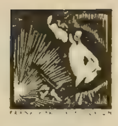
I would suggest, however, that as I have always said, and said in the utmost sincerity of good faith, that I am only at the threshold of what I hold to be the great temple of the architectural art, so you in turn have but a dawning notion of what I conceive to be the principles of that art. These principles have as their prototype the Great God of the Universe. This divinely-human and humanly-divine creative element and power it was my purpose to show forth, to the receptive mind, in 'Kindergarten Chats.' It would seem that in your case I have failed to do so, at least you do not allude to this pivotal conception. This may be due perhaps to the fact that I have made so frequent use of the word 'subjectivity.' I admit it is not a good word—it is essentially objective and pedantic—but in some respects it is the best we have at hand. Suppose, then, that for the purpose of this explanation, I substitute for the word subjectivity the word *Religion,* and state that with me architecture is not an art but a religion, and that religion but part of a greater religion of Democracy. Will that give you a clearer idea of my point of view? And I should like to add that while I love Nature ardently, it is because in worship of her I adore the Infinite Spirit of which she is the partly visible and partly tangible symbol. I do not wish to bore you with long dissertations; and moreover I have no *penchant* for letter-writing, so I hope my few remarks will prove some day not amiss. . . .

With cordial greetings of the season,
Louis H. Sullivan"

* * *

The final words of this letter seem to me prophetic: *this* is the day in which these remarks should not prove amiss. We have circled the world in search of our architectural salvation, feeding on the sweet poisons of the past. But returning at last we find that Sullivan was there before us, because he never stirred from the knees of the Great Mother, from whose bountiful breasts all must draw sustenance.





A window in the fashion salon of Stern Brothers, New York City, designed and executed by Maurice Heaton, of mauve and translucent white vitreous glazes, the ornament being in clear glass. (*Detail on following page*)

Craftsmanship in Decorated Glass

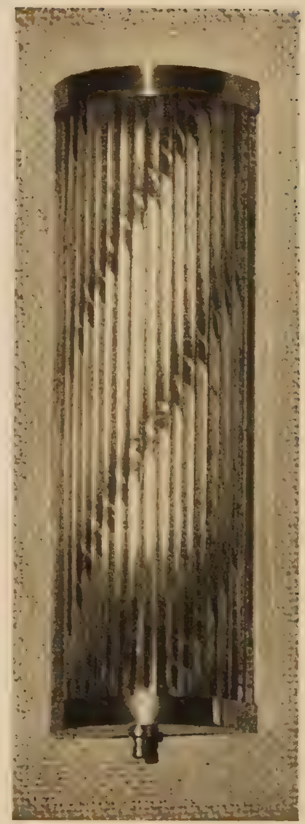
By Eugene Clute

AN artist-craftsman who works in vitreous glazes upon glass, Maurice Heaton, is producing decorated glass of a type that is especially well suited to form a part of modern interior architecture; it has already gained recognition for its artistic merits. Two important installations of this decorated glass have been made quite recently, one in the new showrooms of L. P. Hollander & Company, and the other in the fashion salon of Stern Brothers' store, both in New York City. It is being used in a number of interesting ways and it plays a part in many of the lighting fixtures made by Mr. Heaton.

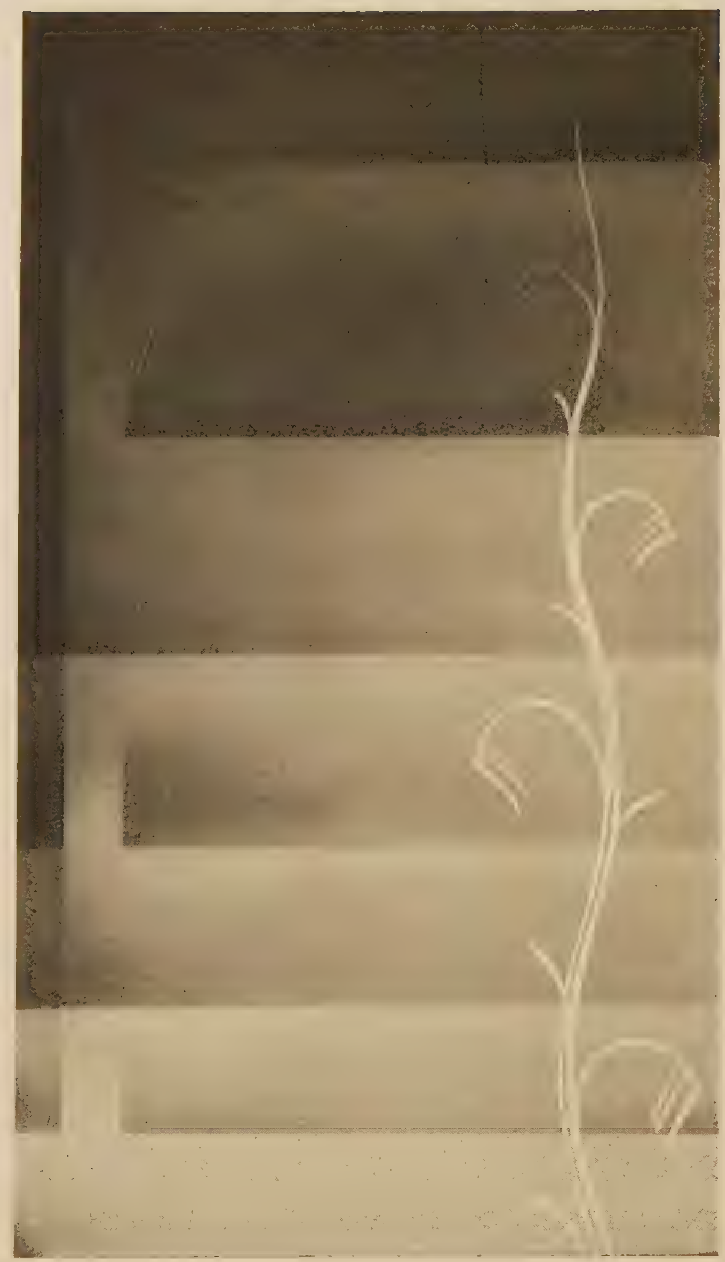
This glass work is entirely different from any of the familiar types of craftsmanship in glass. The design is not formed from pieces of glass joined together, as in leaded glass; it is not etched or engraved or carved. It has qualities that are as different from those of the older types of glass as its method of production is different from theirs.

This decorated glass of Maurice Heaton's is in rectangular sheets, panes or slabs which are set in frames of metal or of wood; and some of them are very large. When it is used in lighting fixtures this glass is sometimes cut to the form of quarter circles or other geometric shapes and sometimes it is bent. The decorating is done upon plain glass, either colorless or tinted, by applying vitreous glazes similar to those used upon faience. When the work is fired at a high temperature in a kiln, these glazing substances turn to glass—glass upon glass, welded together by fusion.

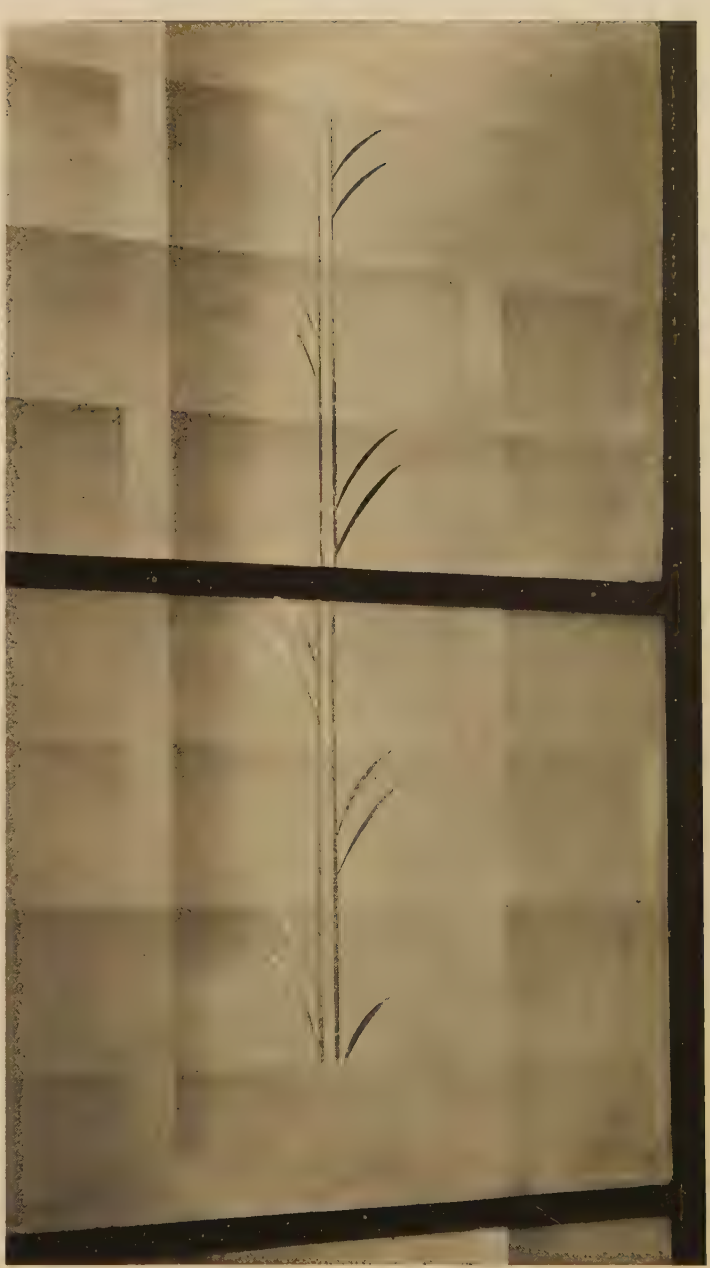
Though there are many refinements involved in the process and the artistry of the worker is a highly important element, it may be



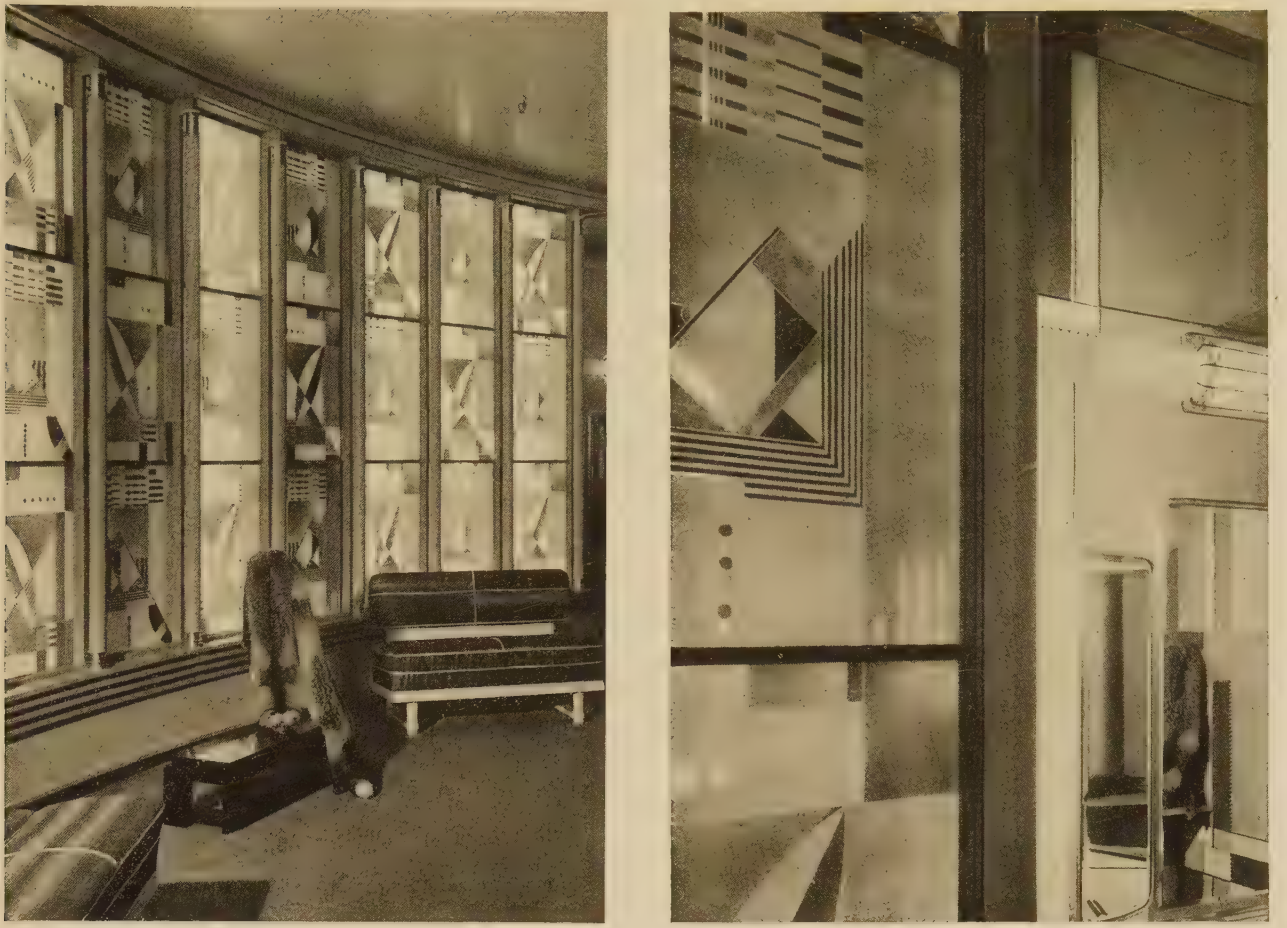
A lighting fixture by Maurice Heaton, in which spiral movement is produced by a vitreous glazed line on the half cylinder behind glass rods



Close-up detail of the window shown on page 16



Close-up detail of the window shown on the preceding page, where the glaze blends from mauve into translucent white with these crystal clear lines

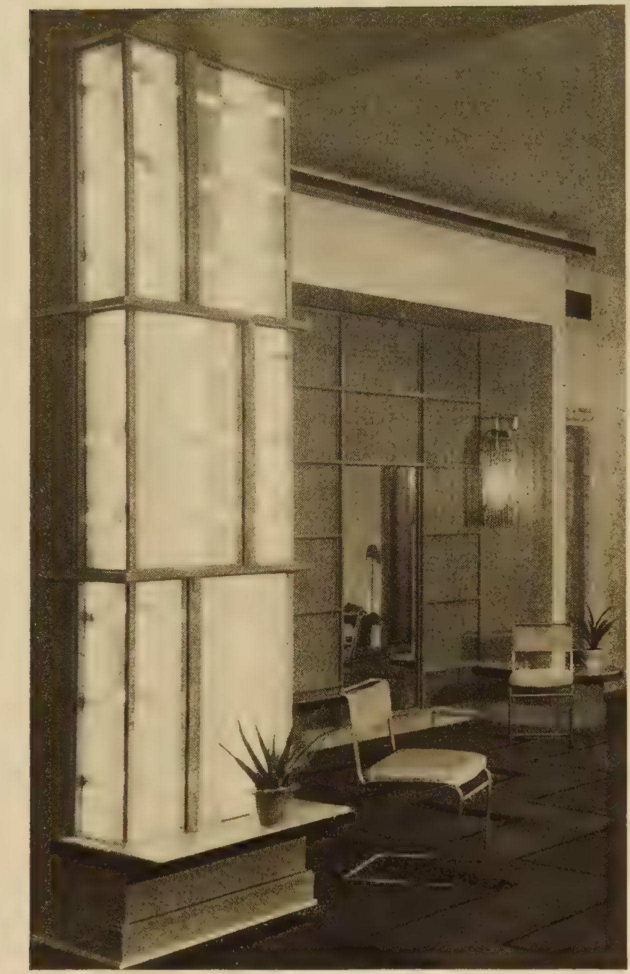


Decorated glass window in the display salon of L. P. Hollander & Company's new building, New York City. Here the decoration is in gray and translucent white glaze with small areas crystal clear. At the right a close-up detail of this glass

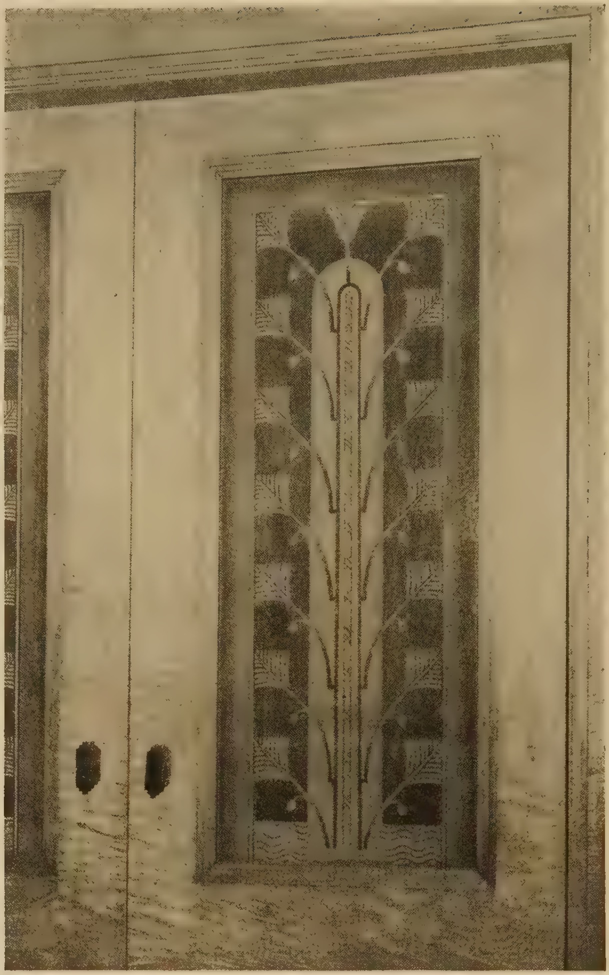
said in general that the method of procedure is to spray a glaze, either white or tinted, upon the glass, evenly or in graded tones and, before the work is fired, to remove the dry glaze with an artist's bristle brush from parts to form the ornament by exposing the clear glass. This ornament is usually in sharp, clean straight lines or sweeping resilient curves. When black is used, it is painted on in lines, frequently in circles or spirals produced by rotating the glass on a turntable under a brush held in the hand.

These works show a play of delicate tones of gray, amber, rose, or of some other single color, sometimes in combination with white, that is relieved by abstract ornamental forms reserved in the clear glass. Sometimes black and white are combined. When tinted glass is used, it is of a light tone of the same color as the glaze.

Though there is nothing in the method of working to prevent the use of any number of colors upon a single piece of glass, the artist has shown a wise restraint in keeping to monochrome in the beginning. Polychromy may be developed more safely as time goes on. So far, the colors used have all been very delicate tints, but this also is a matter of choice. These tints are well suited to the particular interiors in which they have been used. Modern interior treatments of darker coloring would call for somewhat stronger colors in the glass, which could be had quite easily by this method. The writer hopes that we may soon see specimens of this glass in the living colors that were used by the old masters of Japanese wood-block printing—colors which should lend themselves extremely well to this type of glass with its delicacy of tones and its luminosity. The blue for which Hiroshigi is famed should be very fine in this medium, used in graded tones as it is in the skies of old prints. A brilliant old red should be good also; and there are the rich yellows and the purples. The possibilities of this medium have hardly begun to be appreciated.



A light source in L. P. Hollander & Company's new building, New York City, where Mr. Heaton has used sapphire blue, white and crystal glass



Glazed doors in a Park Avenue apartment, New York City, where the designer has used warm amber glass and an amber glaze with the English sycamore

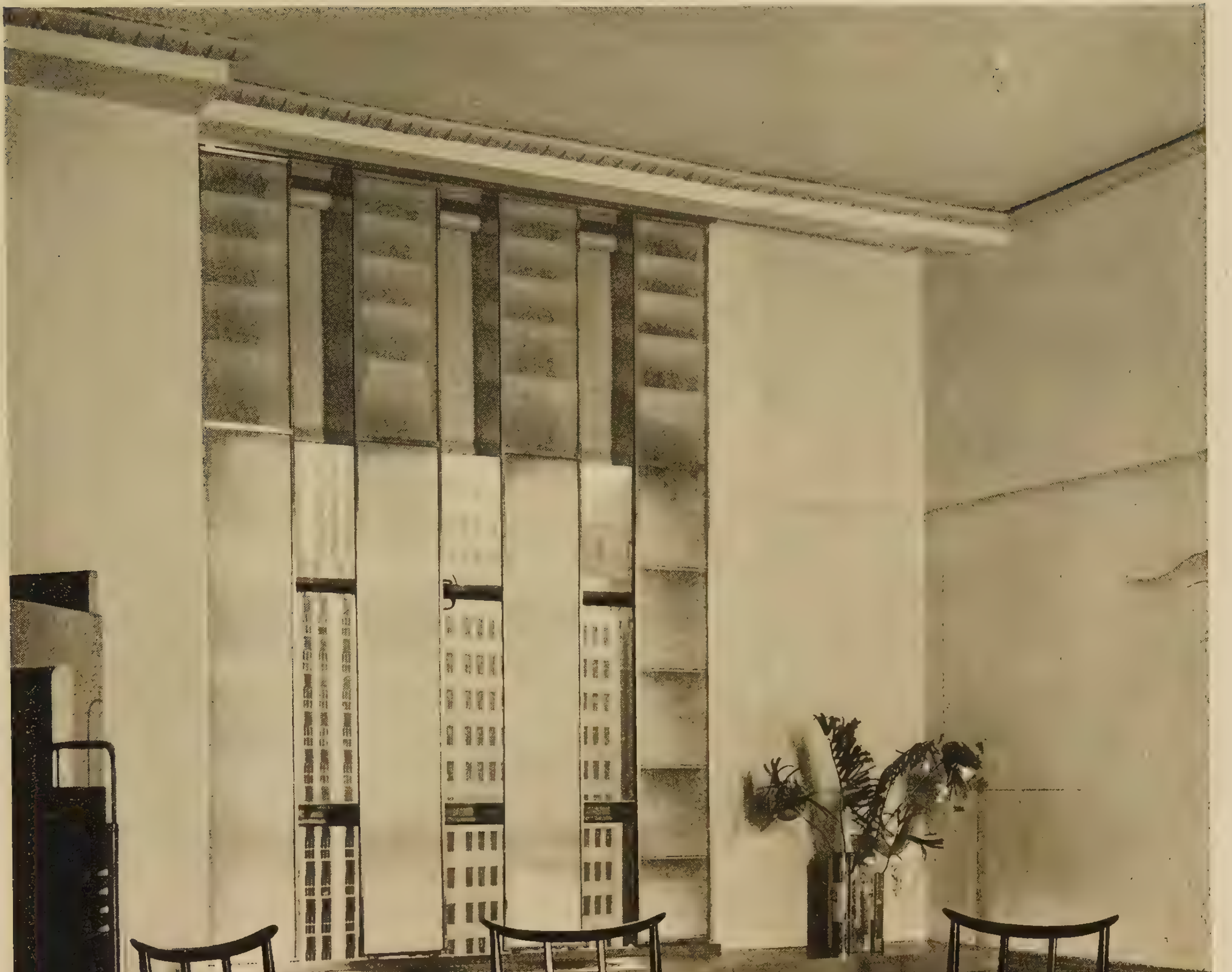
Just as the rich, multicolored mediæval glass, with its blazing gem-like bits of ruby and sapphire glass, its irregular forms and the heavy lines of its leading, was suited to its place in the massive reveals of the dark old stone buildings, so this new, light and delicate-toned type of decorated glass is suited to the modern ensemble.

Glass decorated in this way by Maurice Heaton occupies practically the entire front of one of the large display salons in L. P. Hollander & Company's building, as shown in one of the illustrations herewith. The design is in a gray glaze, a white glaze and in clear glass. The gray glaze varies in tone with its thickness, and as the light strikes it at different angles shows a play of mingled warm grays and cool grays against the frosty, translucent white glaze, with the bits of exposed crystal-clear glass for accent.

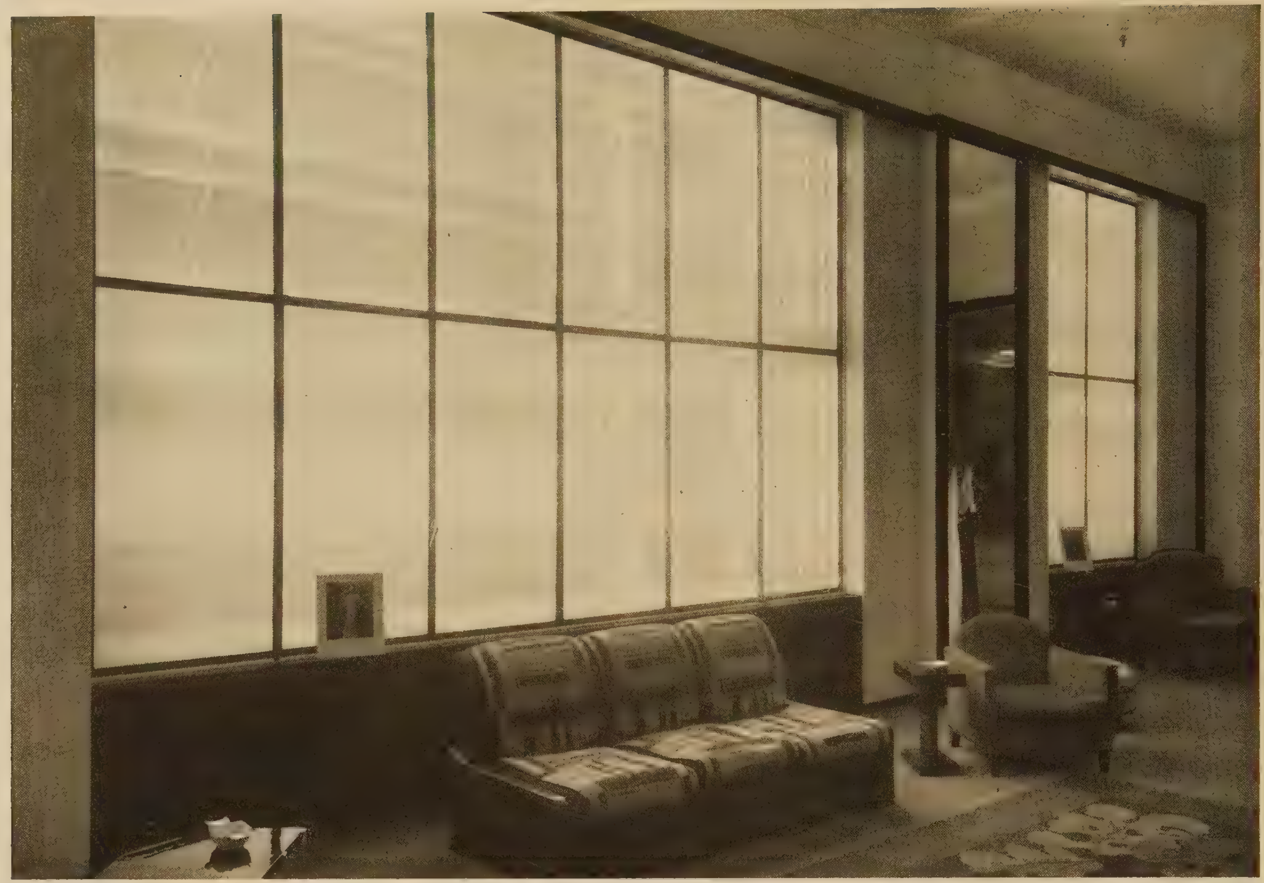
Also in the showrooms of L. P. Hollander & Company is the pillar of light that serves the double purpose of a decorative feature and a light source. The glass is decorated in blue glaze and translucent white, with accents of clear crystalline glass. The interiors of these showrooms were designed by Jock Peters and Eleanor Lemaire.

The doors in a Park Avenue apartment show the use of a tinted glass as the basis for the decoration in glazes. The whole scheme here is in varying tones of warm amber. The glass is amber, and so is the glaze, which was sprayed on, then removed in parts with a brush as indicated above. In the photograph, the clear glass appears darker than the design in glaze, but when the light shines through these glass panels the design appears the darker. The woodwork of the doors and the walls is amber also, being of English sycamore, which varies from amber through tones of buff to a light yellow. Emilio Levy was the architect.

A very novel window treatment is the one here illustrated, composed of vertical bands of



A particularly interesting scheme by which the rather unattractive view from the large window in a salesroom was broken up by these vertical panels of glass set in bronze frames, glazed in amber and white

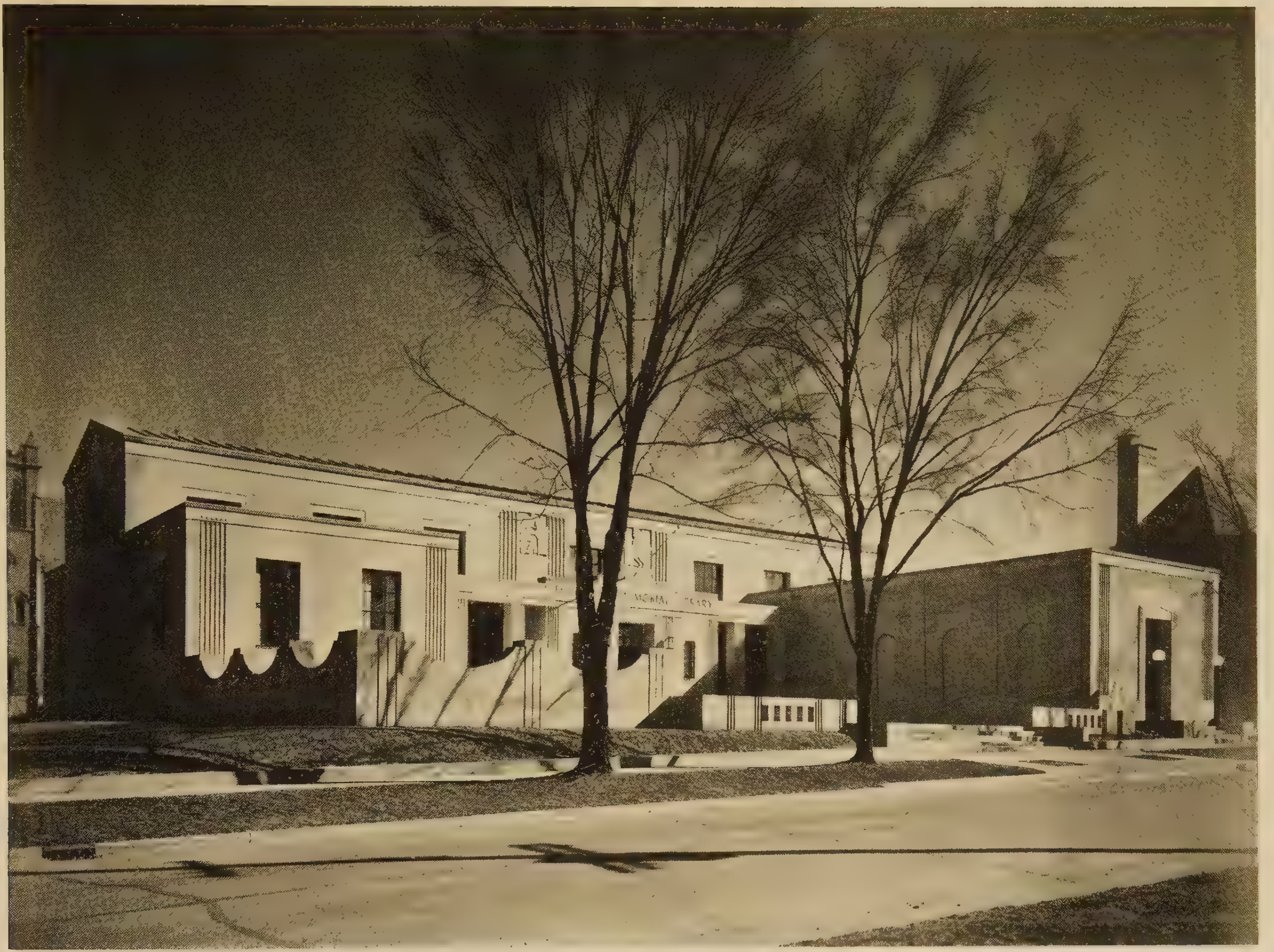


Another window of Mr. Heaton's in the fashion salon of Stern Brothers, New York City. Horizontal bands of mauve glaze grade into translucent white, and these in turn lose themselves in transparent glass. It gives daylight in a decorative form without the distraction of what may be seen from the window

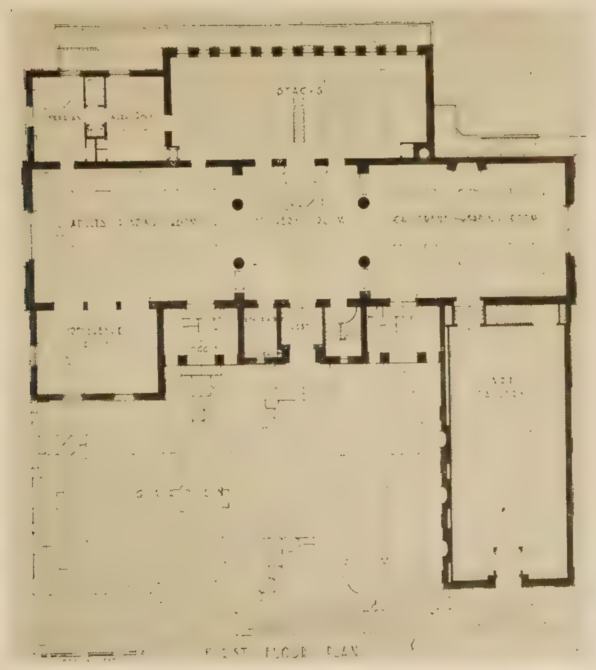
decorated glass set in bronze frames reaching from the top to the bottom of the window, with spaces between through which the window sash and the window shade can be reached and operated, and through which glimpses may be had of the out-of-doors. This unusual arrangement has many advantages: it dresses the window without excluding the light. There is also a special reason for this method of treatment in this instance, since silken fabrics are displayed in this salesroom. Glass does not here compete for attention, but rather accentuates the softness and sheen and other purely textile characteristics of these fabrics. The coloring here is amber and white, light amber glass decorated in graded tones with a translucent white glaze in broad but delicately marked horizontal bands that decrease in depth toward the top of the window. Eugene Schoen was the architect.

Very large and beautiful examples of this glass work are those in Stern Brothers' store. Many of the pieces of glass used here have a length of sixty inches. The general light-mauve coloring of the decorated glass picks up the light mauve of the wall. The horizontal bands of mauve upon the glass grade out, losing themselves in bands of translucent white that in turn grade to the crystal transparency of clear glass.

Maurice Heaton is a thorough craftsman in stained glass and has for many years worked in association with his father, Clement Heaton, who is well known for his superb work in this field. This new type of decorative glass is a development of one of the methods which father and son long employed in reproducing the translucence of twelfth-century glass that has been eroded by exposure to the elements. Struck by the beauty of this effect, the younger man made this the basis of a new system of glass decoration, with the results which we have considered above. It is rather fortunate that the technique is not easy to master, since this will tend to prevent the art from falling into the hands of those who may not possess Maurice Heaton's artistic ability and his true craftsman's conscience.

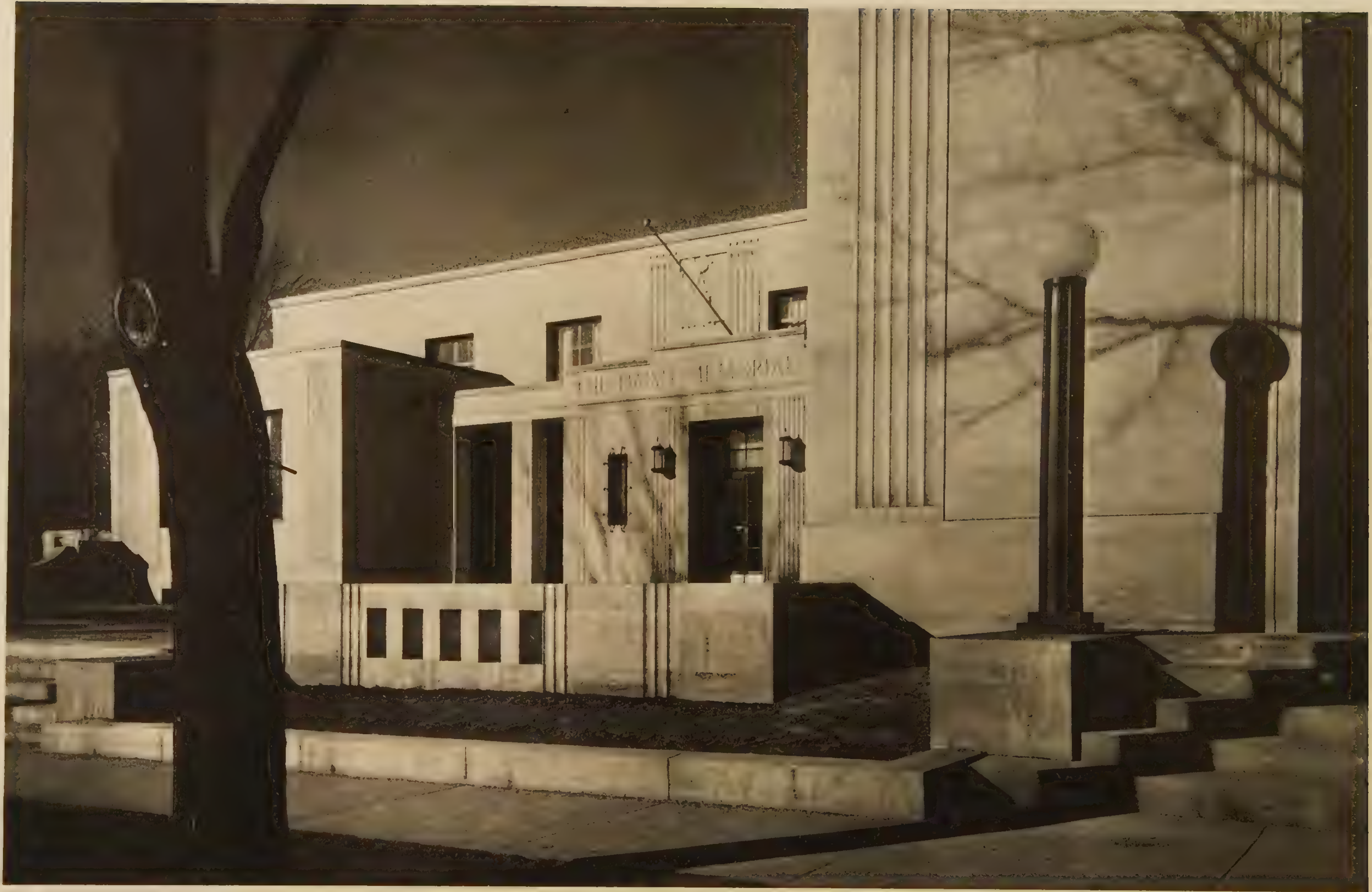


Photographs by Hedrich-Blessing Studio

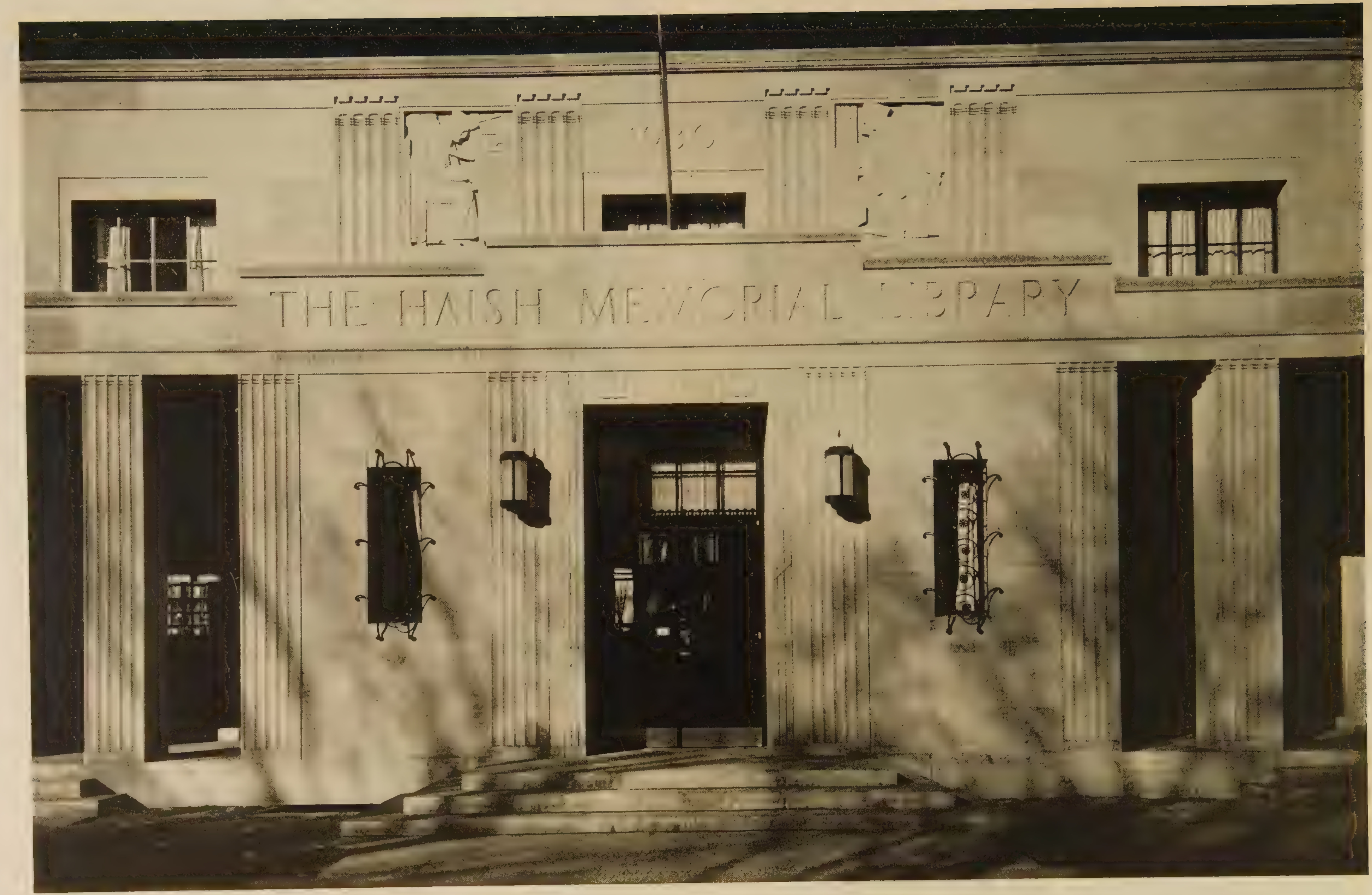


HAISH
MEMORIAL LIBRARY,
DEKALB, ILL.

WHITE & WEBER,
ARCHITECTS

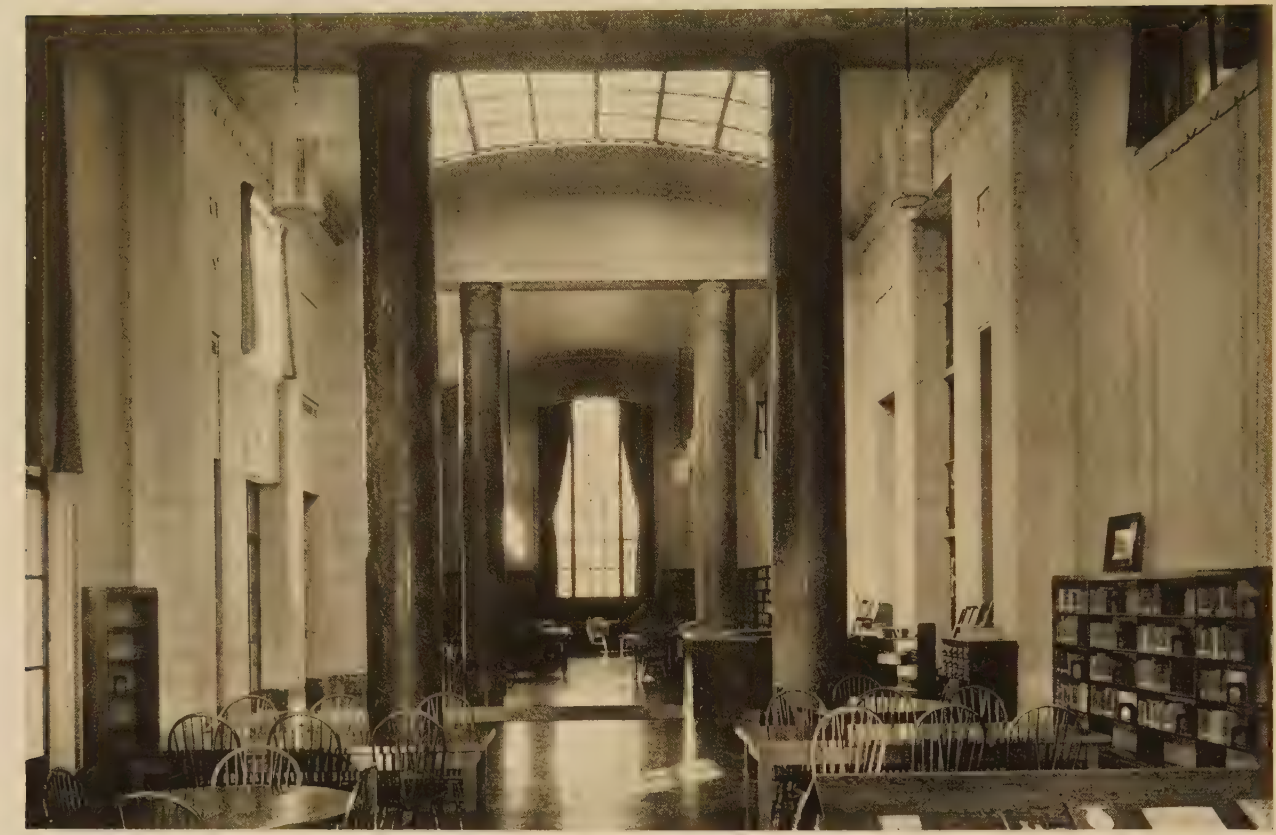


Haish Memorial Library, DeKalb, Ill.
White & Weber, Architects



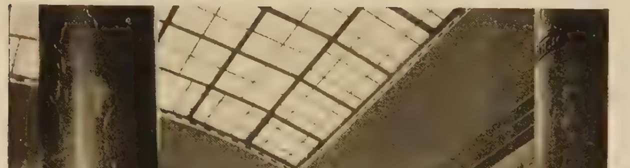
Haish Memorial Library, DeKalb, Ill.

WHITE & WEBER, ARCHITECTS

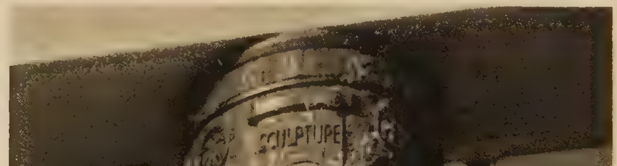


On the main transverse axis through the reading-rooms

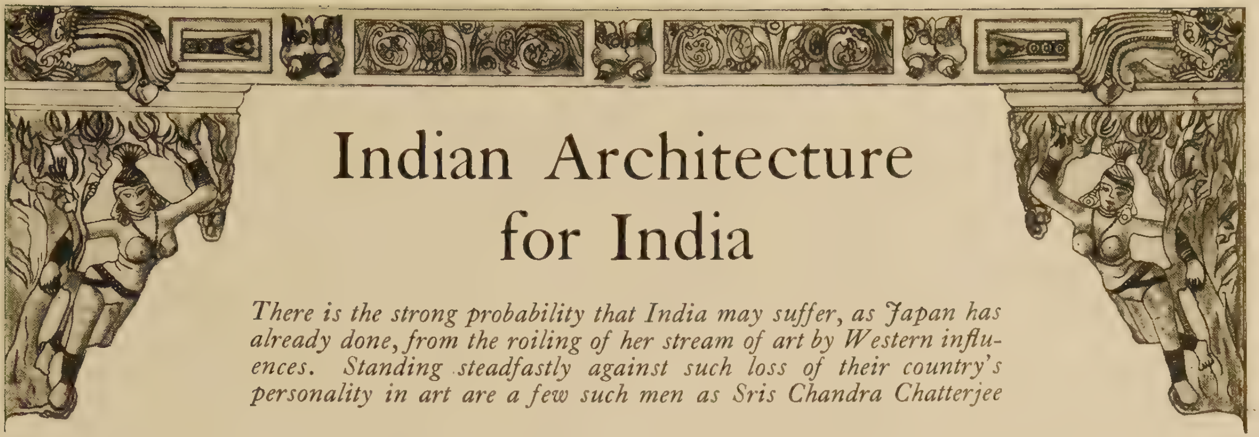
The delivery desk



Detail of an interior column capital



HAISH MEMORIAL LIBRARY, DEKALB, ILL. WHITE & WEBER, ARCHITECTS



Indian Architecture for India

There is the strong probability that India may suffer, as Japan has already done, from the roiling of her stream of art by Western influences. Standing steadfastly against such loss of their country's personality in art are a few such men as Sris Chandra Chatterjee

By Harvey Wiley Corbett

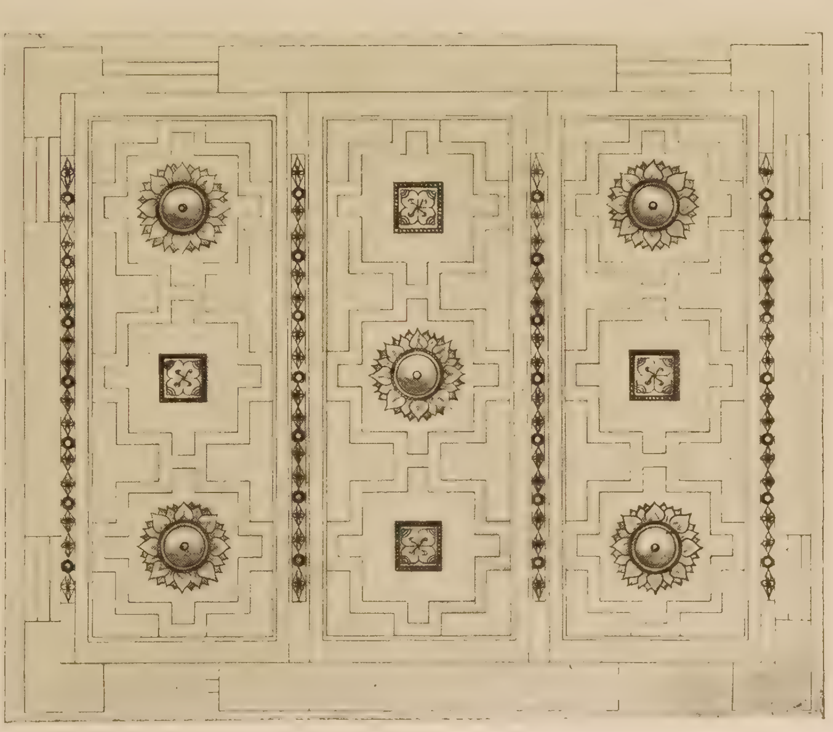
WE of the West, especially here in the United States, concerned primarily with our own progress—commercial and cultural—immeshed in our own problems and difficulties, are hardly conscious of India with her teeming population two or three times the size of our own. Here is the oldest continuing civilization of which we have a record, architecture, sculpture, painting, crafts, that have been slowly developing through the centuries, while we pride ourselves on our achievements of two hundred years at the most.

India is to-day threatened by the march of Western civilization. The world may lose so much of real value in art, philosophy, and spiritual force that we should look with interest and keen attention to the effort now being successfully made by Sris Chandra Chatterjee to establish a real Renaissance of Indian architecture for his own country.

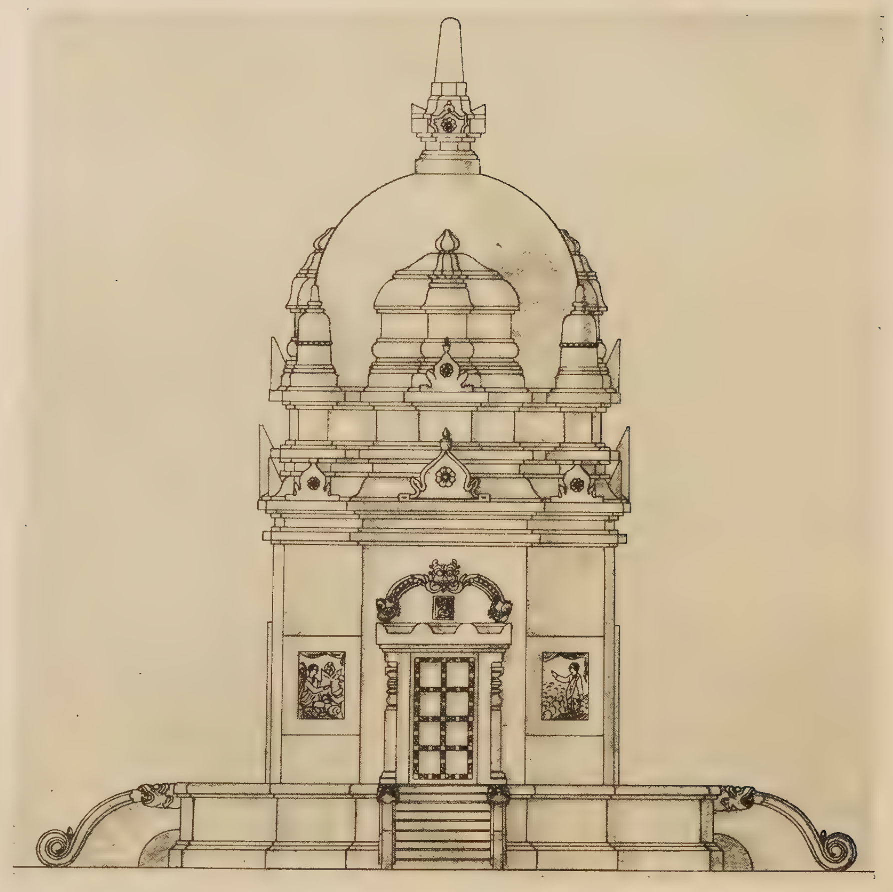
Chatterjee is a man of broad culture, has travelled extensively, and knows what is best of Western science and engineering. But he also realizes that the truly functional expression of a people rests in their architecture and allied arts. Their spiritual and philosophic beliefs are best expressed through this medium. While he realizes that India must come abreast of modern trends in town planning, sanitation, and commercial development, he still knows that through the preservation of her arts she will retain her individuality as a people, and therefore retain for the world those rare qualities of spiritual value which the onrush of industrialism has so seriously threatened.

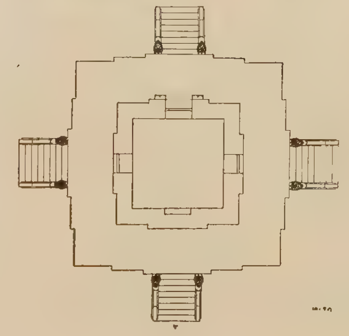
Chatterjee goes far beyond a simple theory as to what an architectural Renaissance would mean in India. As a practising architect he has erected many buildings in which he definitely shows not only a keen sense of rational plan arrangement, fitting modern needs, but great architectural skill in re-

At top of page, Goddess of the Forest in brackets under ceiling beams, the whole decorative scheme representing a forest



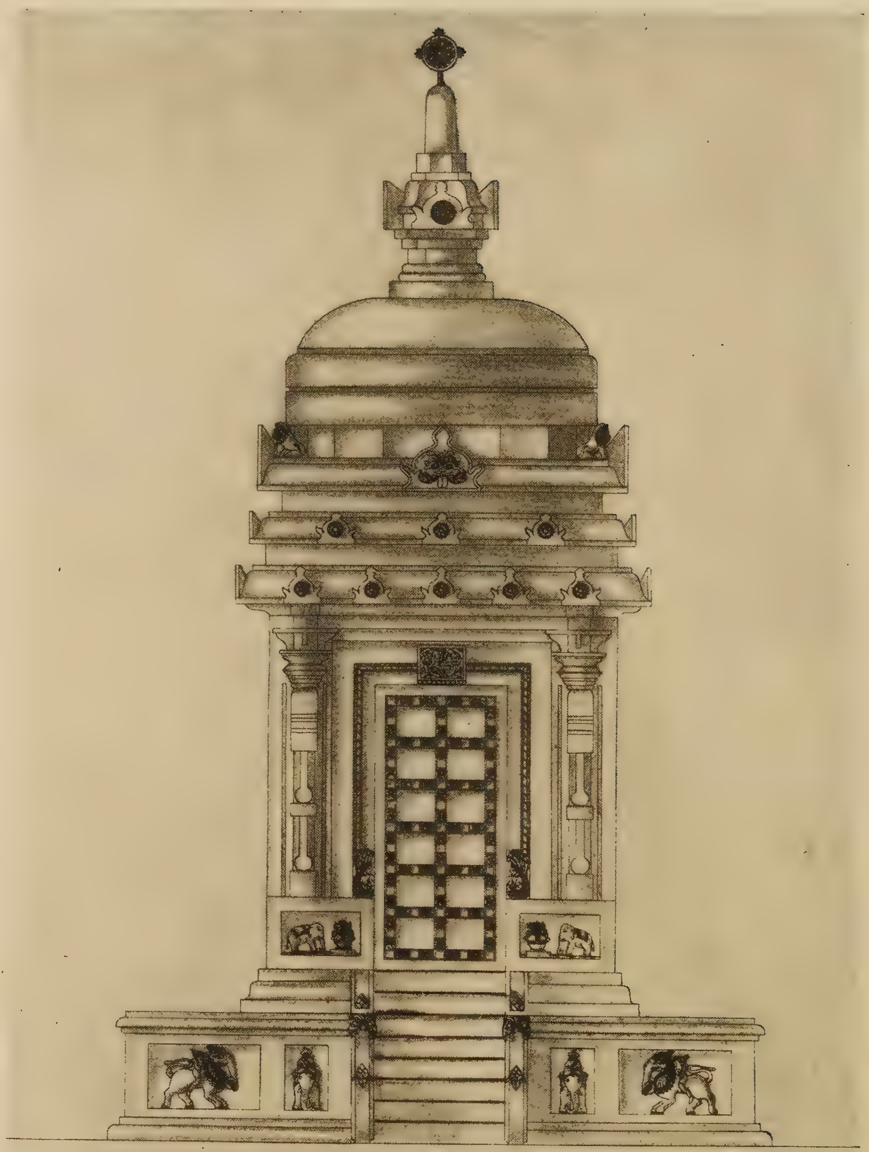
Ceiling plan of a drawing-room, the decorative centres utilizing lotus and conch-shell motives from which lights are hung





Proposed Desbandhu Memorial at Keoratala Burning Ghat, with plan of the same at left, in which Chatterjee has tried to express the aims, ideals, and aspirations of a great political leader in India. Here again the memorial is intended to be executed in reinforced concrete

Chatterjee's design for a memorial to a Princess of Agartala, India. Here the material is stone. Notice the snake motive about the door opening



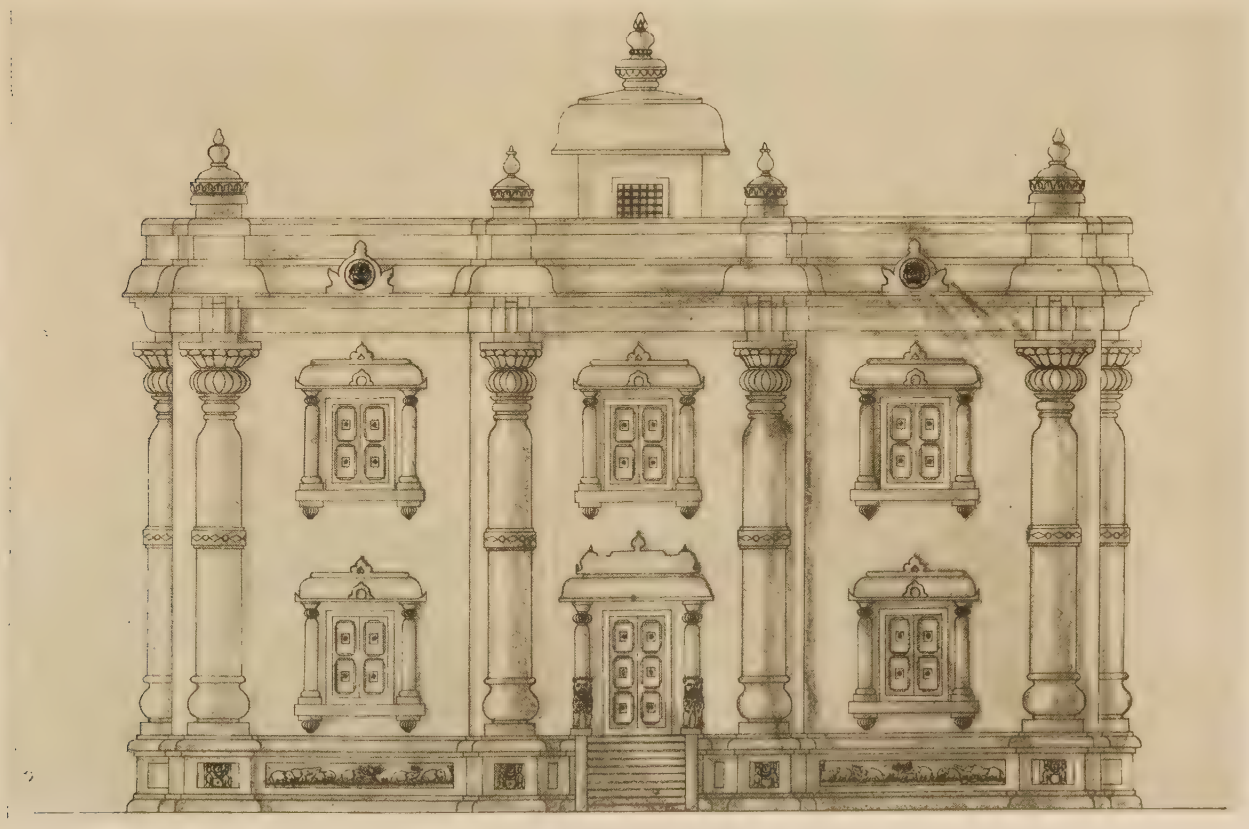
Above and below, ornamental terra-cotta tiles executed in Chatterjee's school of architecture

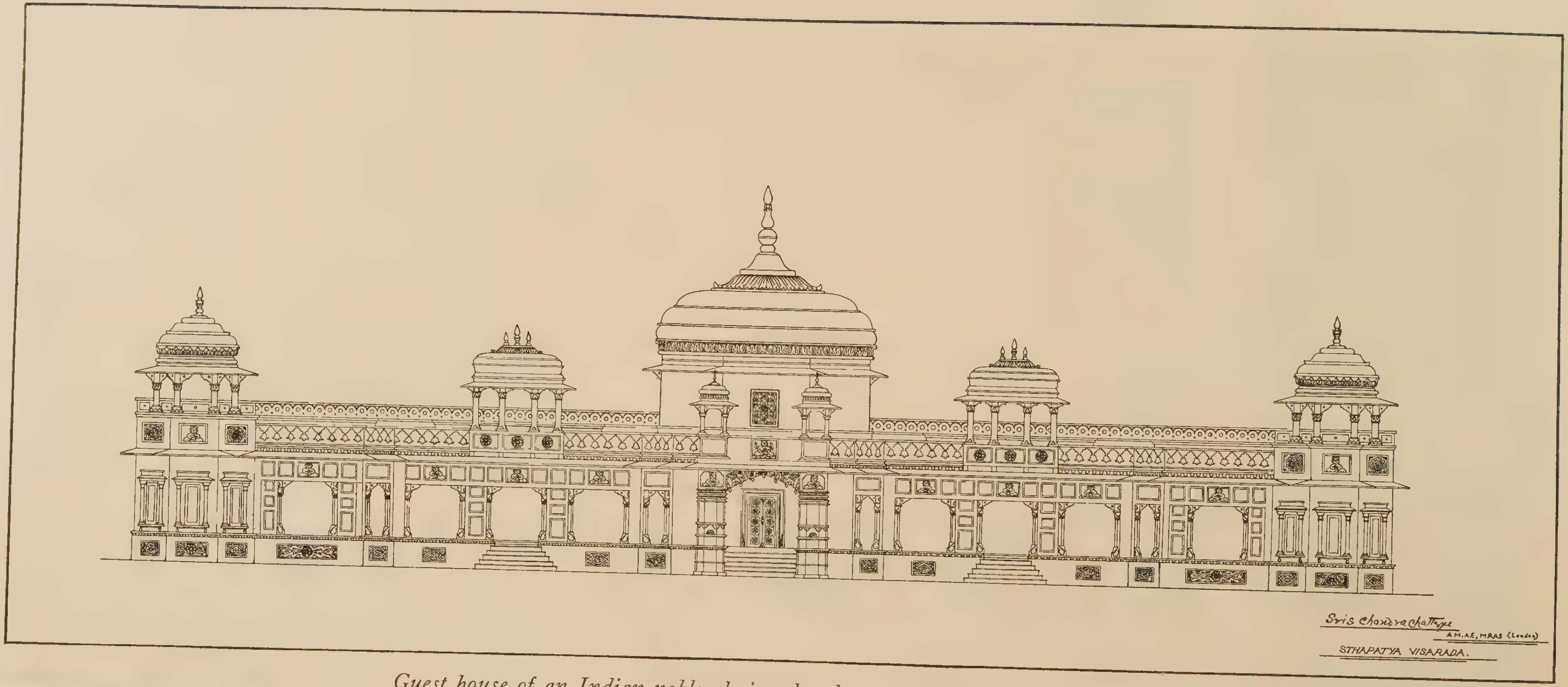
taining and adapting motives which recall beautifully the best of Indian art and yet are not lacking in originality. Through the architectural school which he founded in Calcutta, he is spreading his influence among the younger generation.

In addition to actual work erected, he has allowed his imagination to play with important potential problems, dealing with these in a manner which points the way to government authorities and others occupying positions of power, whereby real achievements in city planning could be accomplished. He possesses that rare faculty of seeing his problems from a broad constructive angle and at the same time deals with the most minute details of sculpture and ornament with studied care and characteristic spirit.

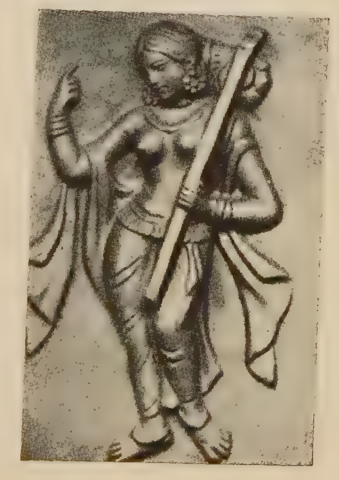
All of us who are interested in the finer things of life will sympathize with Mr. Chatterjee's efforts to keep his country's art unspoiled and will support him in every way possible. I wish him all success.

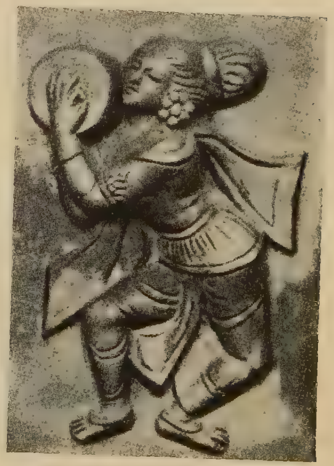
Design for a suburban bank in India. Sculptured bands in the base show treasure chests of the Goddess of Wealth, elephants on the march, and demons in the column pedestals, bowed beneath the weight above. Guardian spirits are represented over the windows—all in concrete.



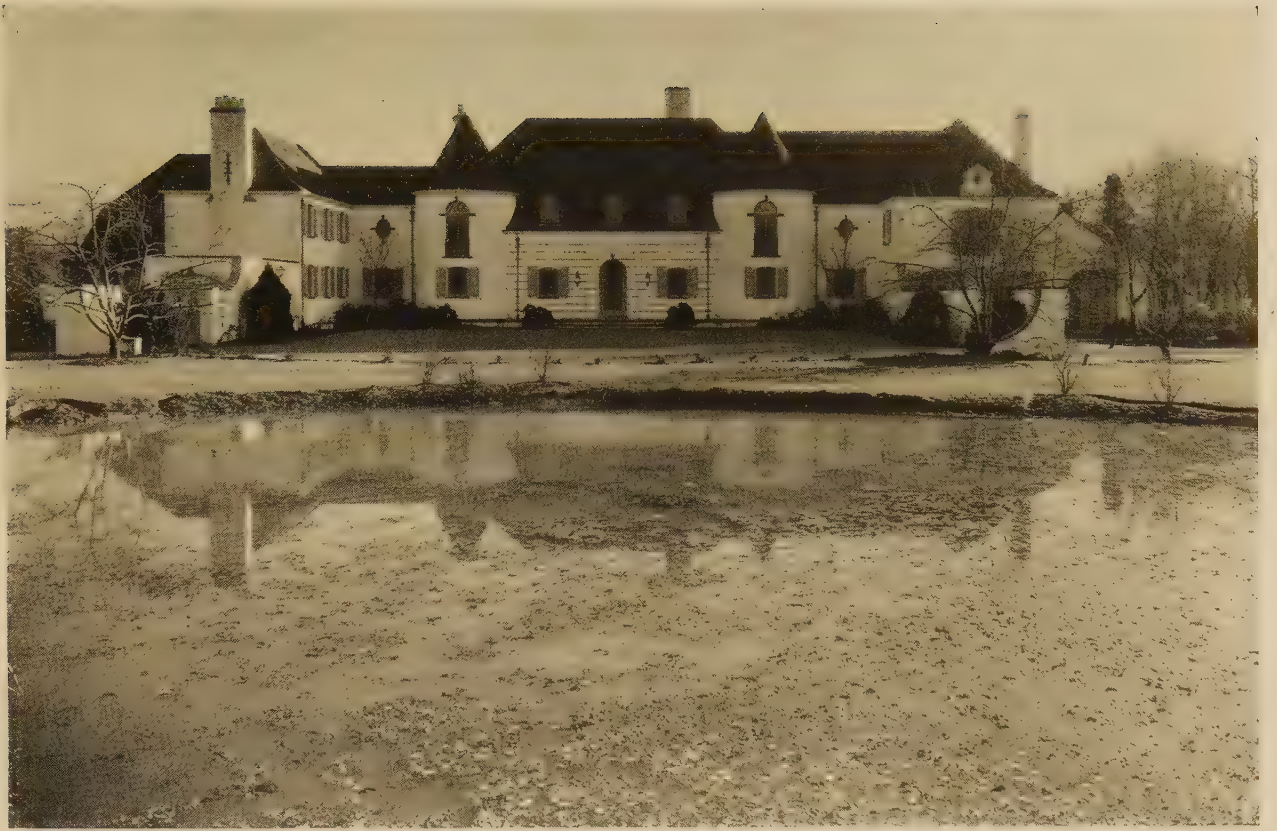


Guest house of an Indian noble, designed to be erected in a garden and to be constructed throughout of white marble. The upper levels of the intermediate pavilions are provided for the host and his guests to enjoy at their ease the beauties of a moonlight night, the octagonal end pavilions being used for ceremonial music



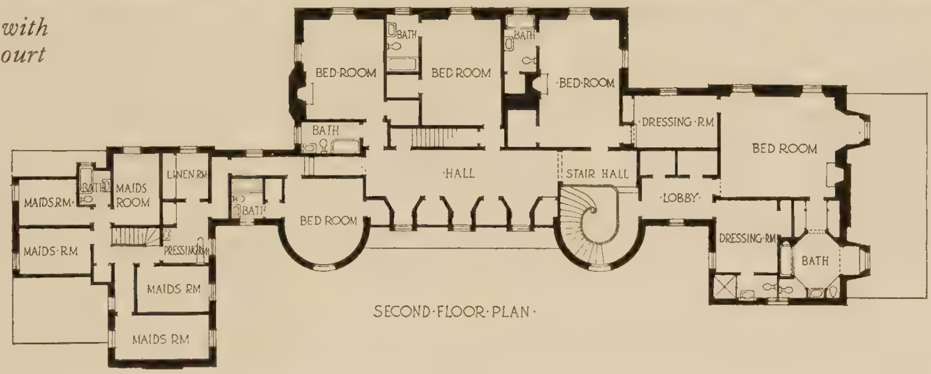


At left and right, ornamental terra-cotta tiles designed and executed by Chatterjee's pupils in his school of architecture in Calcutta

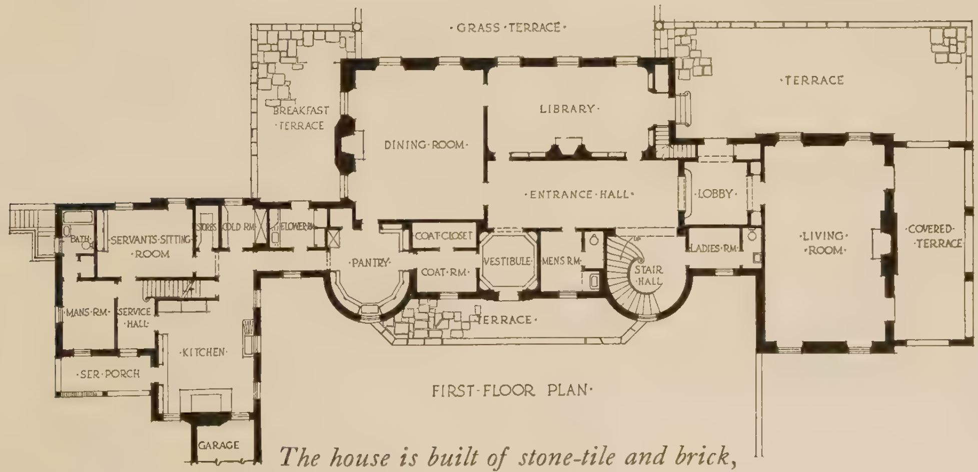


Photographs by Samuel H. Gottscho

North elevation with main entrance court



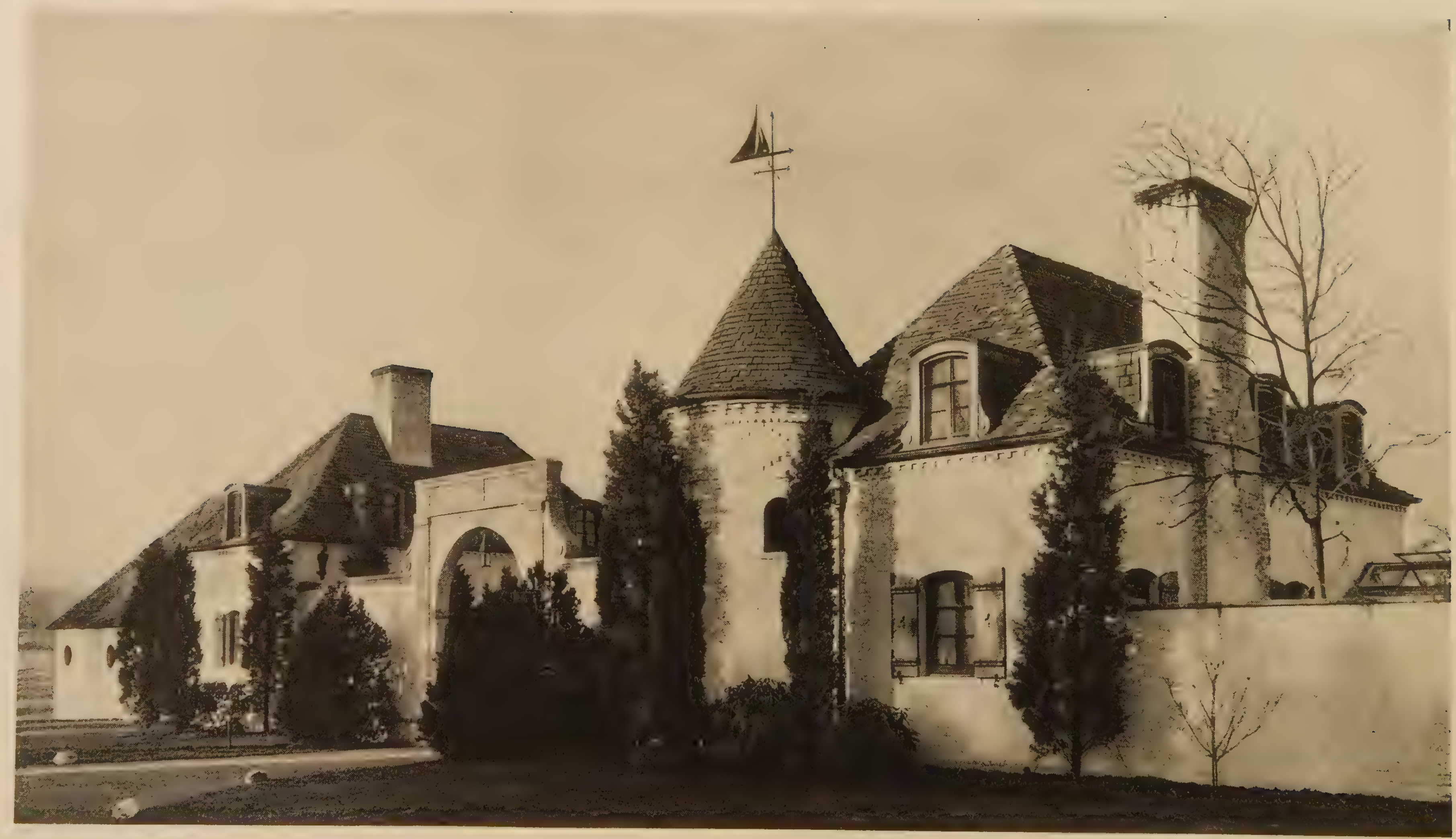
SECOND·FLOOR·PLAN·



FIRST·FLOOR PLAN·

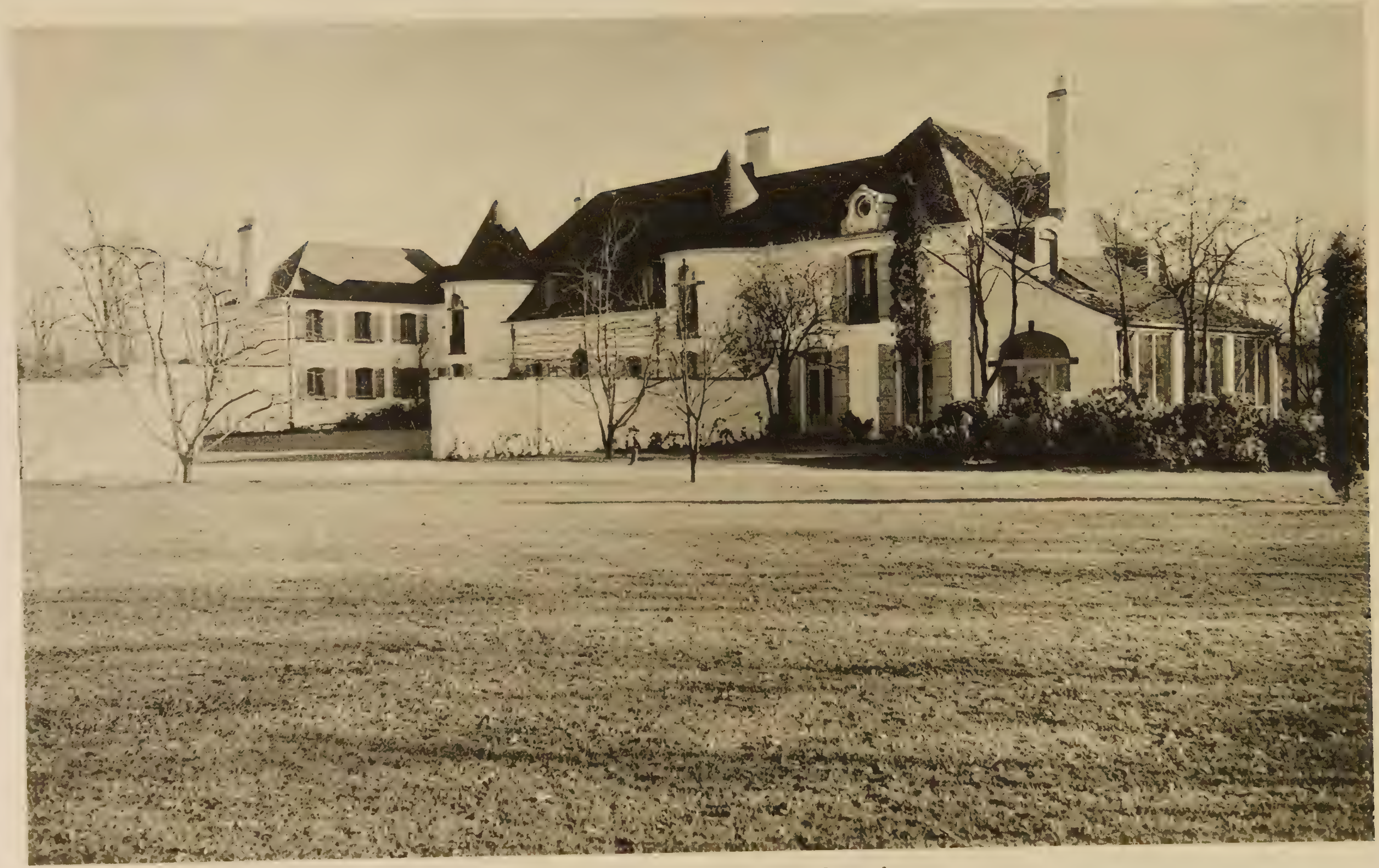
The house is built of stone-tile and brick, painted white; the horizontal bands, coping, etc., of flagstone

House of Carroll B. Alker, Brookville, Long Island BRADLEY DELEHANTY, ARCHITECT



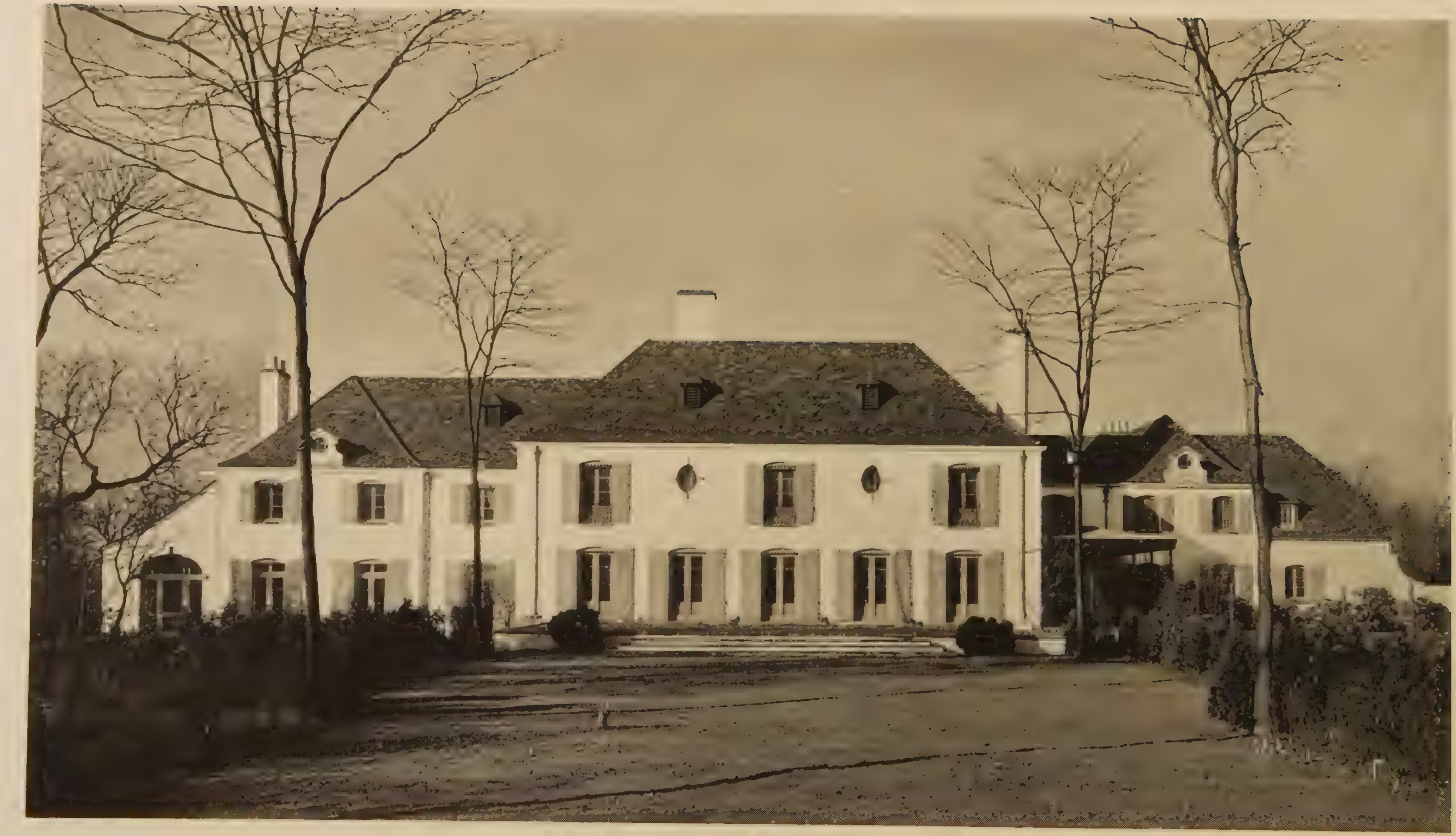
Entrance lodge from the road, with garage, chauffeur's and gardener's cottages and greenhouse

House of Carroll B. Alker, Brookville, Long Island. BRADLEY DELEHANTY, ARCHITECT



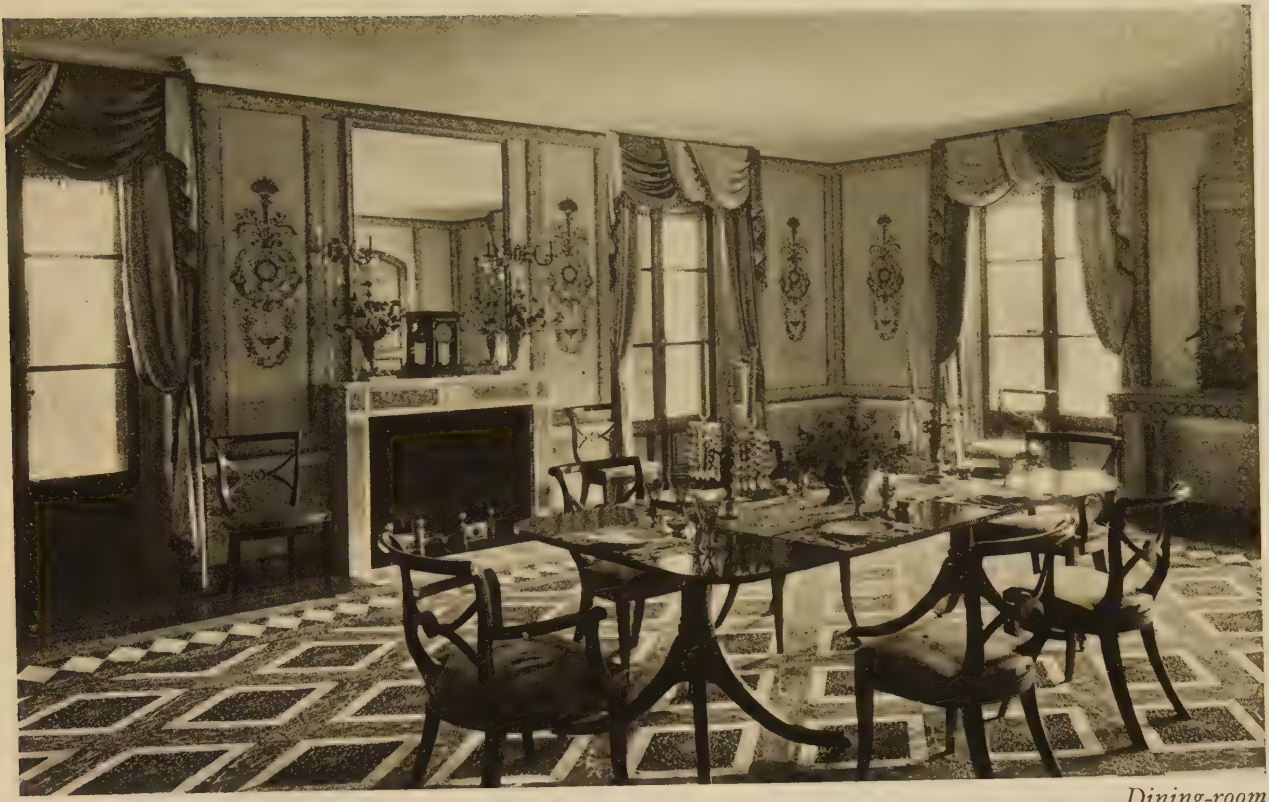
Showing view into entrance court from the northwest

HOUSE OF CARROLL B. ALKER, BROOKVILLE, LONG ISLAND. BRADLEY DELEHANTY, ARCHITECT



The south, or garden, front

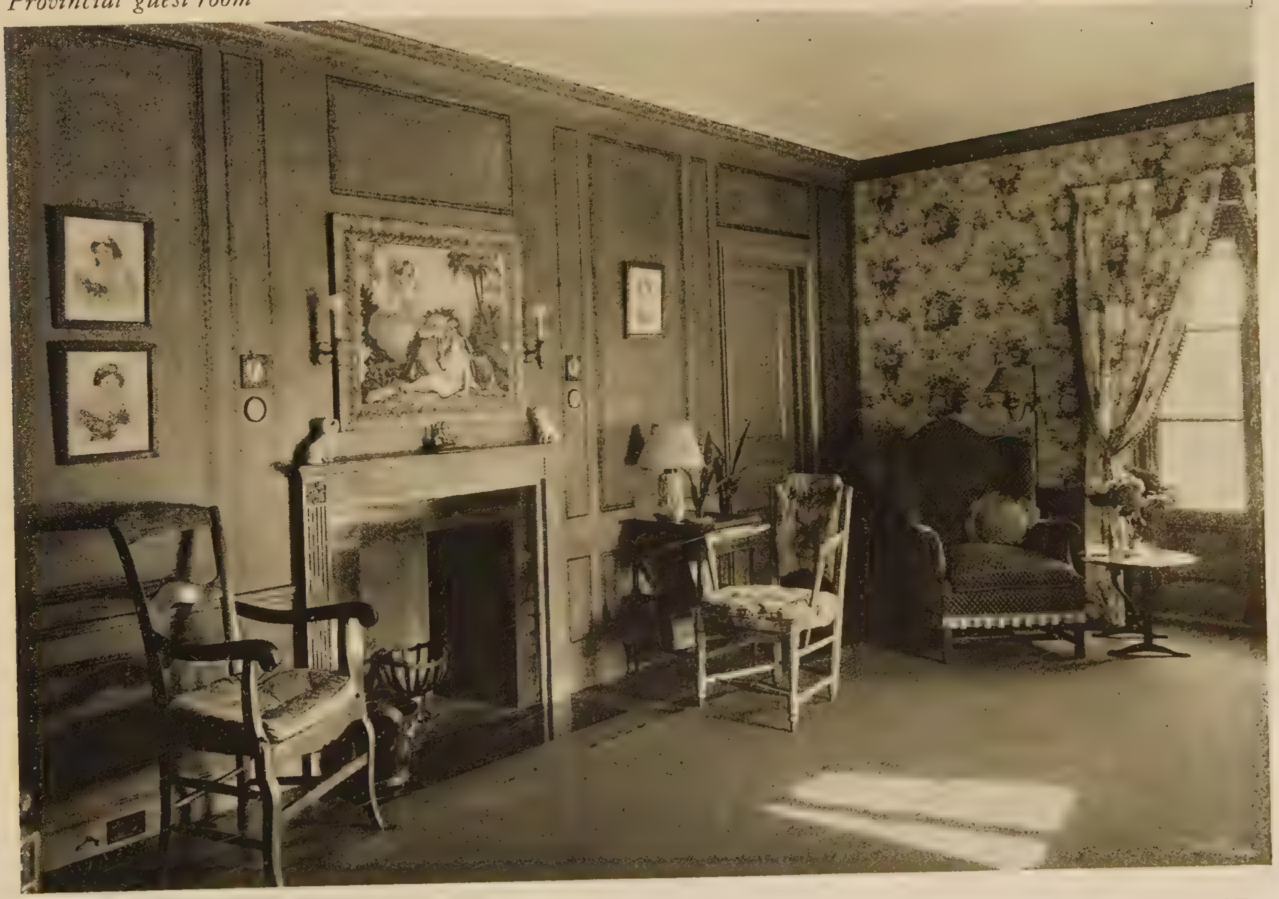
House of Carroll B. Alker, Brookville, Long Island. BRADLEY DELEHANTY, ARCHITECT



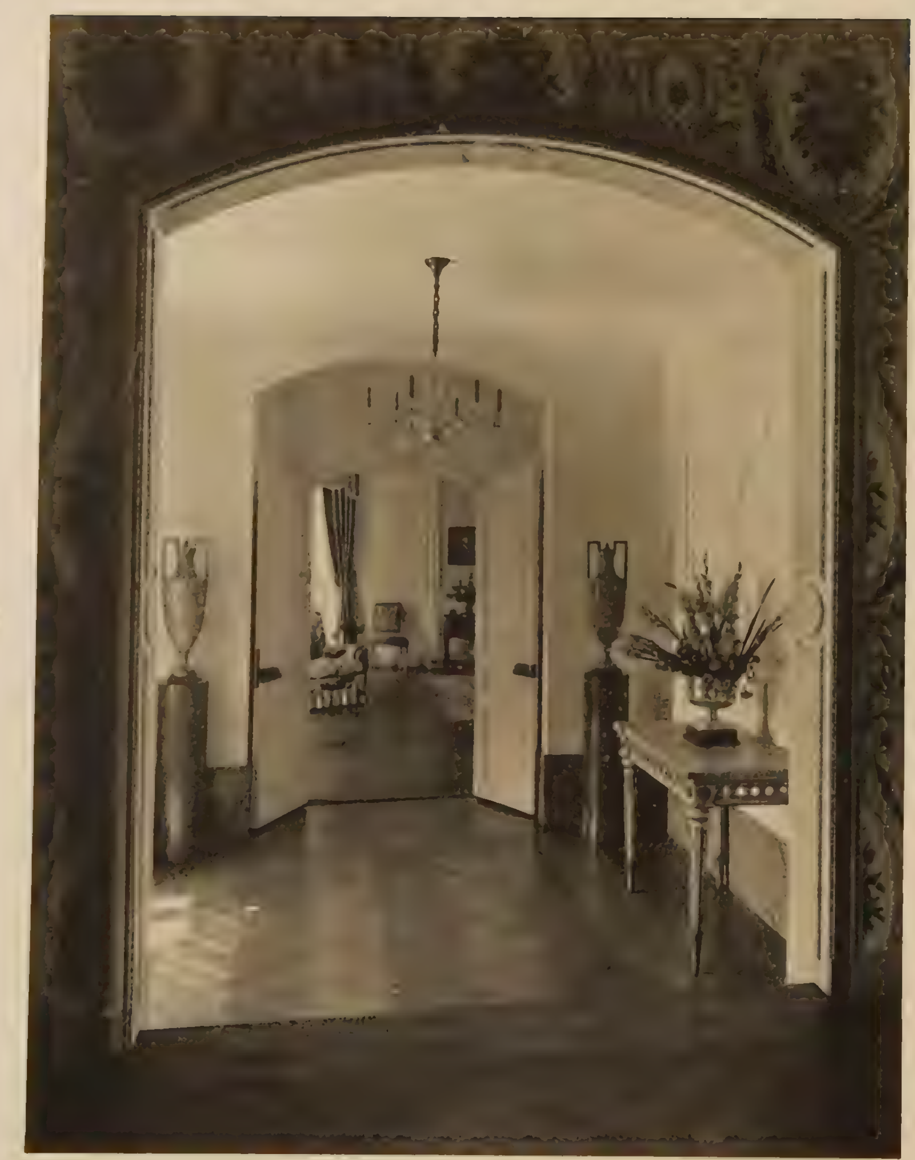
Dining-room

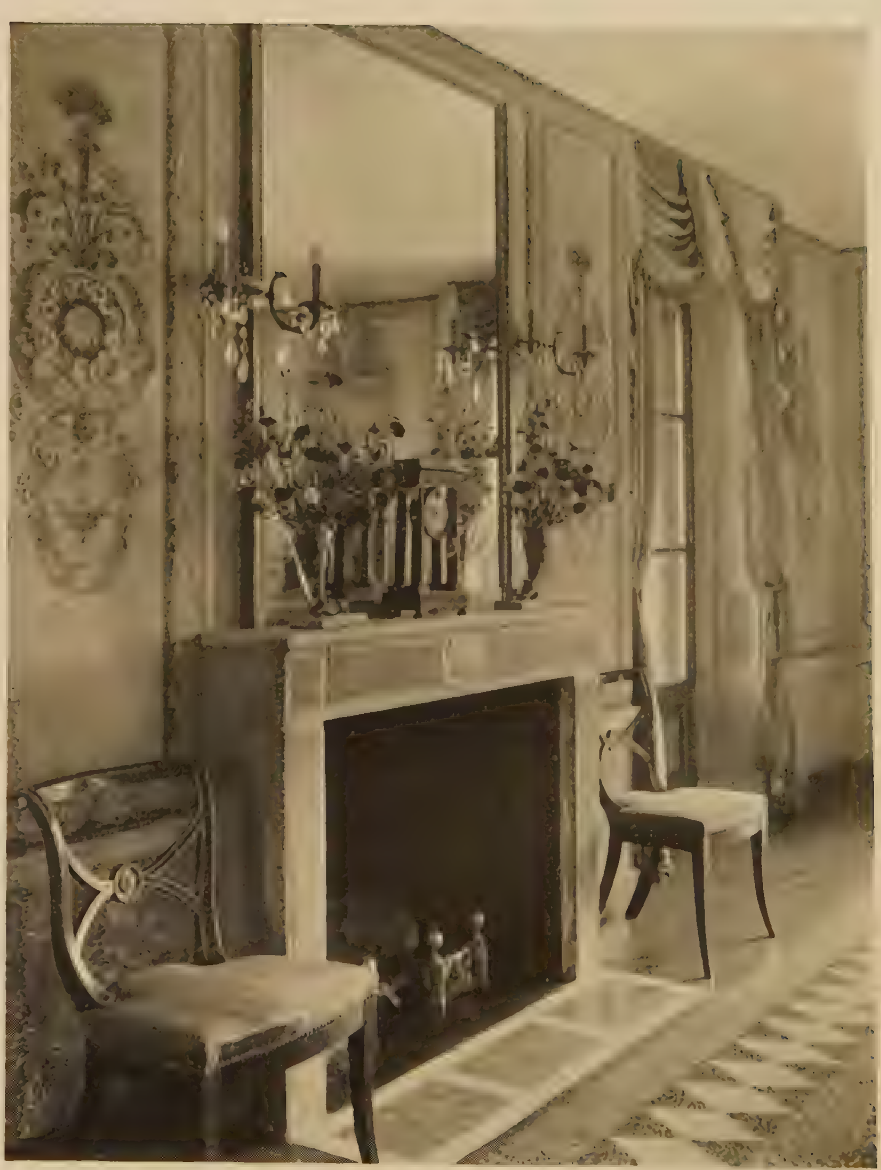
Thedlow, decorators

Provincial guest room



House of Carroll B. Alker, Brookville, Long Island. bradley delehanty, architect





Gallery hall leading to dining-room *Thedlow, decorators* *Detail of dining-room fireplace*

HOUSE OF CARROLL B. ALKER, BROOKVILLE, LONG ISLAND. BRADLEY DELEHANTY, ARCHITECT

The Liturgical Requirements of Churches

IV. THE ALTAR AND ITS FURNISHINGS (*CONTINUED*)

By F. R. Webber

INSTEAD of a reredos one may use a dorsal curtain with side riddles. This is an inexpensive solution of the problem, and it is soundly historical as well. The use of the dorsal and riddle curtains dates back to the fourth century. The earliest Christian altars were screened on all four sides by curtains. There were four corner posts, connected by horizontal rods at the top. The dorsal curtain, or upper frontal, hung east of the altar; the riddle curtains hung at the north and south of it. A western curtain screened the altar from the worshippers. As time went on the principle was laid down that no curtain ought to separate the worshippers from the altar. The western curtain was removed to signify the fact that the way of access to the altar was open to the true believer. From this evolution of the altar we have our present-day dorsal curtain and riddles.

The dorsal curtain, more properly called the upper frontal, is a hanging of rich tapestry or brocade. It is as wide as the altar is long, or perhaps a little wider. It hangs by means of loops, made of rich gold braid, from a horizontal metal rod. This rod may be bracketed to the east wall of the chancel, but a better practice is to suspend it between two riddle posts. We Americans exaggerate everything, and for this reason we have evolved a monstrous thing composed of a dorsal curtain about 20 ft. and riddle curtains about 8 ft. high. One or two prominent British architects followed this practice. It is vulgar and bad for the same reasons that a lofty reredos is bad.

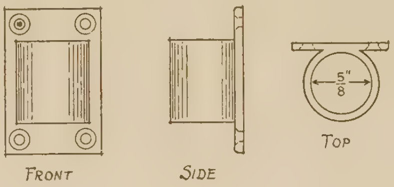
A less lofty dorsal curtain is much better. In fact, a very beautiful arrangement is that which one may find, for example, in Trinity Church, Princeton, N. J., where the riddle curtains are about 8 ft. high, and the dorsal is no higher than the riddles. Four carved riddle posts, standing at the corners of the altar, support these curtains.

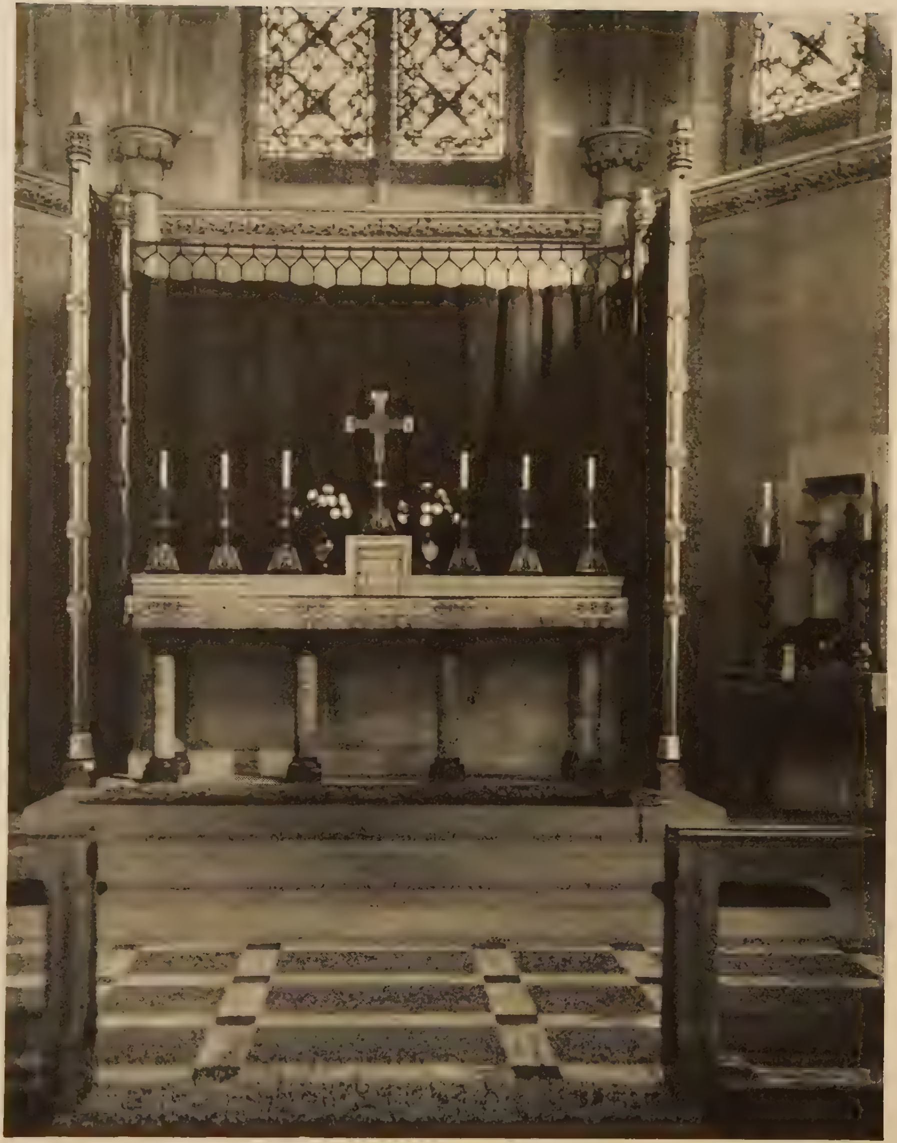
A dorsal curtain may, however, be higher than the riddles. The one in St. George's Chapel, Newport, R. I., seems to be about the proper height. It is a little higher than its width, and is finished with a projecting canopy about the size of the top of the altar.

The dorsal curtain, or upper frontal, may hang flat, or else there may be vertical folds. It must not be stretched tightly upon a frame, or the character of the fabric is lost. It may be divided vertically into three or more panels, but this is not essential. If this dorsal is small, it may be of one of the five liturgical colors. In fact, there may be five dorsals, one in each of the liturgical colors: white for the greater festivals of Our Lord, violet for Advent and Lent, green for the Trinity season, black for Good Friday, and red for Whitsunday and apostles' and martyrs' days. But this is by no means liturgically essential. One dorsal may be used throughout the year, or again there may be but two: one for festivals and another for the non-festive seasons of the Church Year. In England a plain unbleached linen dorsal is often used during Lent.

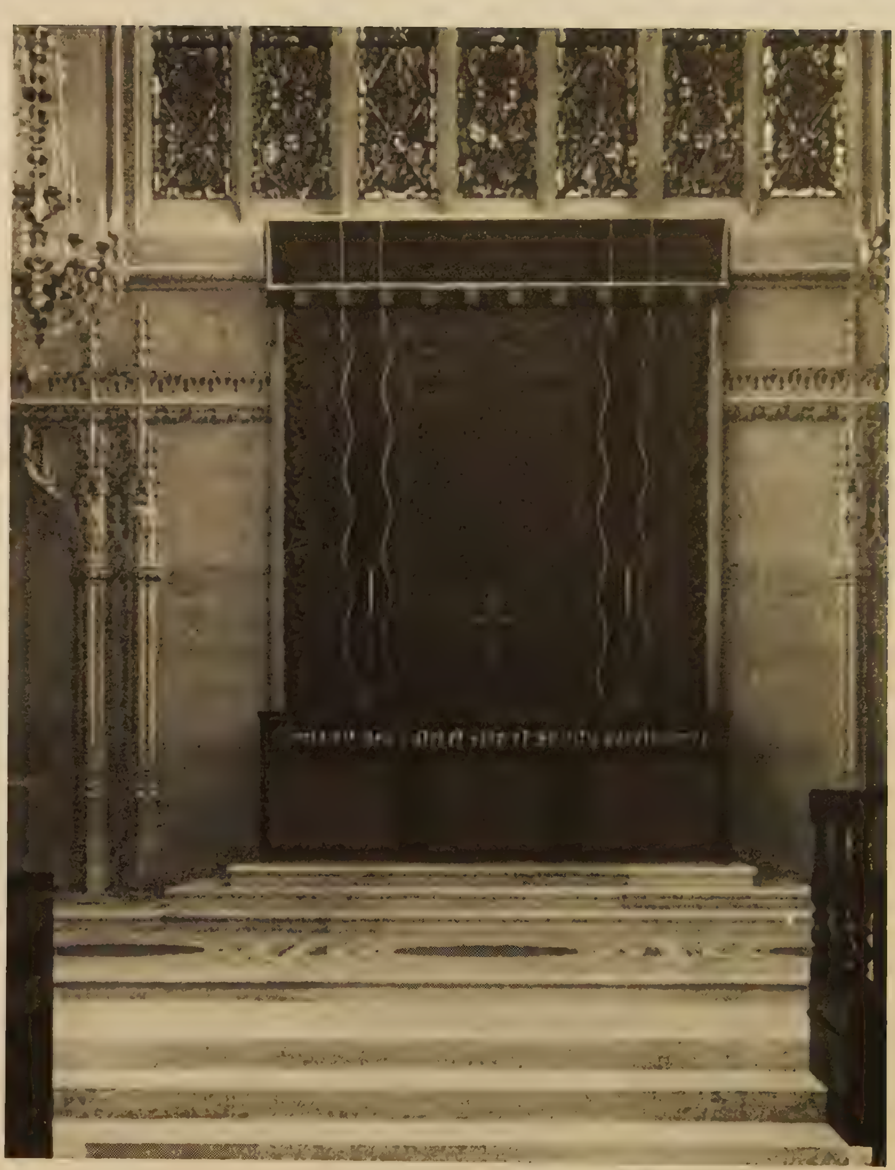
The riddle curtains need not match the dorsal in color, nor need they be of one of the liturgical colors. These curtains hang at the sides of the altar, and absolutely parallel to its ends. Just who started the vulgar and decidedly unliturgical practice of hanging the riddles at an angle of forty-five degrees to the east wall, one cannot say. It is a practice that cannot be too strongly condemned. Not only does it cause the riddle curtains to lose their traditional significance, but it is sure to introduce a jarring note of ostentation that an architect or clergyman of good taste will not allow.

If beautifully carved riddle posts cannot be afforded at first, an inexpensive method is to fasten tiller-rope guides (obtained from any nautical supply house) to the east wall on either side of the altar, and fix swinging iron rods into these. It is a good thing to allow the riddle curtains to swing away from the altar, for this is necessary when vesting it. The better way, however, is to provide four portable riddle posts, one close to each corner of the altar. Riddle curtains, incidentally, are from 6½–7½ ft. in

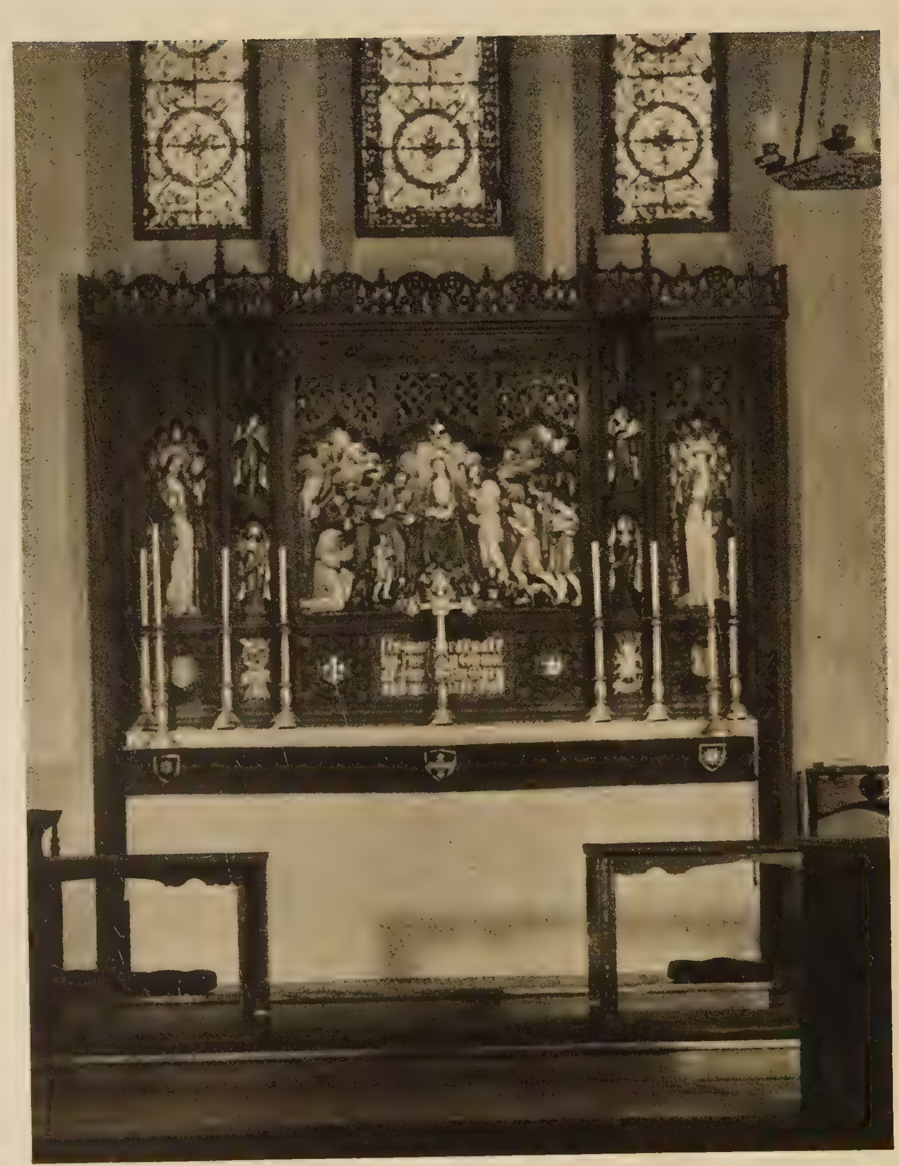




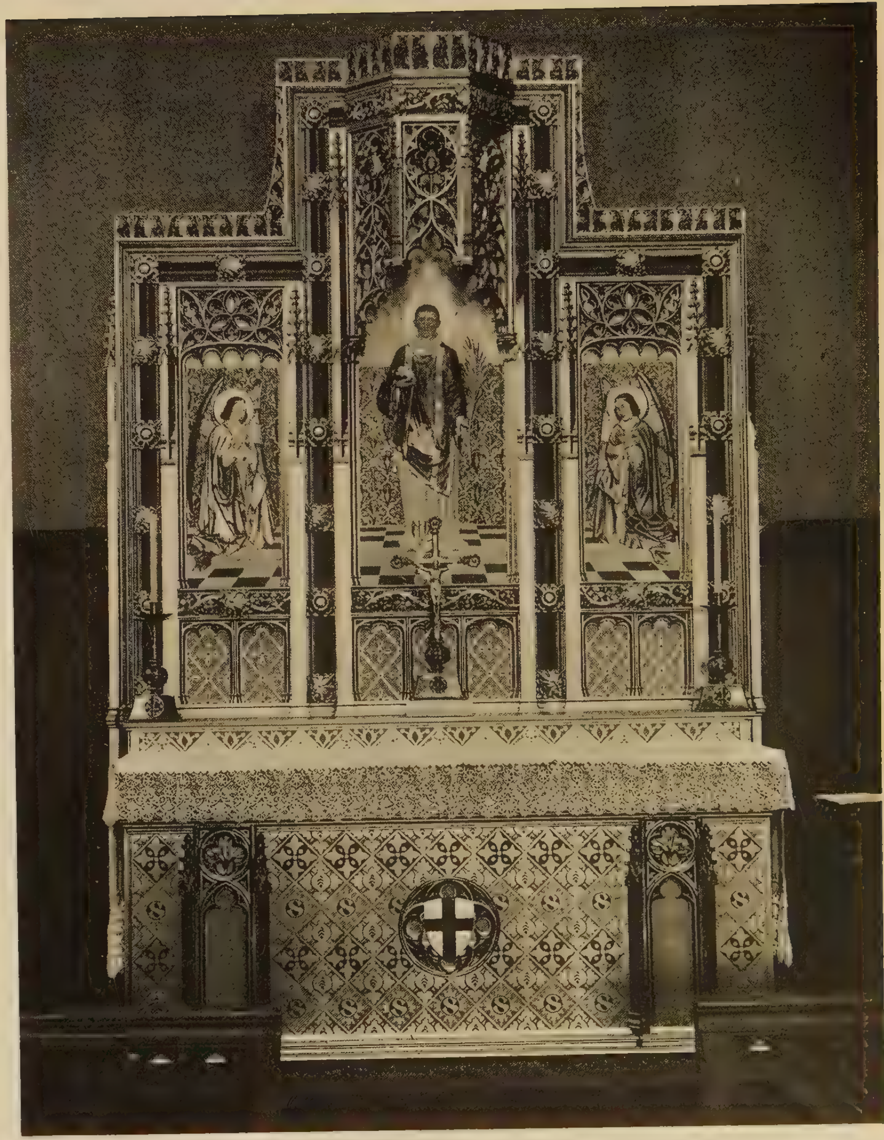
Trinity Church, Princeton, N. J. Cram & Ferguson, architects. An altar with dorsal curtain, riddle curtains, and riddle posts. Upon the altar is a tabernacle, set in the middle of a gradine



St. George's School Chapel, Newport, R. I. Cram & Ferguson, architects. A very simple altar with cross and candlesticks resting directly upon the mensa. Behind the altar is a simple dorsal curtain with riddles

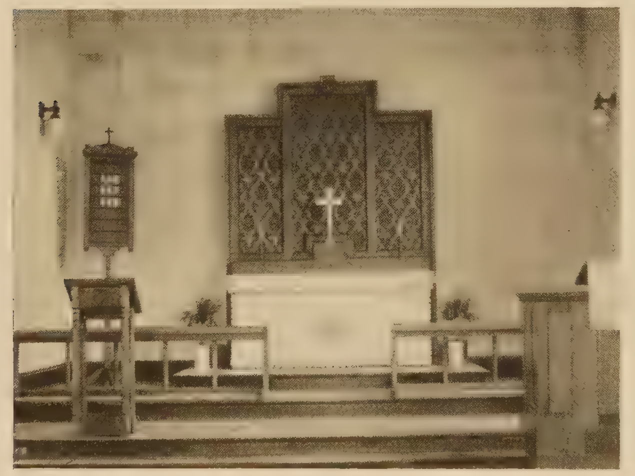


Main altar, church in Lake Delaware, N. Y. Cram & Ferguson, architects. Tradition calls for two candlesticks, and the lower end of the cross itself, exclusive of the base, should be in line with the tops of the candlesticks



Chapel altar, All Saints Church, Dorchester, Mass. Cram & Ferguson, architects. A retable is used here, and the altar is vested with a frontlet and fair linen, but without a frontal height, and extend forward at least as far as the front edge of the mensa. They may be of rich tapestry or brocade, with edgings of dull gold braid. They are suspended by means of loops of gold braid, each loop from 3–4 in. long.

The architect ought to be consulted in regard to the character of the season vestments. The five liturgical colors are generally used to conform to the seasons and festivals of the Church Year. Some years ago silk damask was universally used, but in recent years there is a tendency to use the richer brocades and brocatelles, such as Kirkstall, St. Hubert, Geldart, St. Alban's, and other well-known fabrics. A properly vested altar has a frontal and a frontlet (incorrectly called a "superfrontal"). The frontal is a piece of rich fabric the exact size of the front of the altar. It hangs vertically from the mensa to the floor. It ought not to be stretched on a frame, but rather be provided with small silver rings by which it may be suspended from hooks affixed to the under side of the projecting front of the mensa. This frontal is finished at the lower end with fringe from 1¾–2 in. deep. There may be fringe at the ends about 1–1½ in. deep. If the best of needlework can be obtained, then one may use rather bold designs in needlework. But the ordinary run of commercial needlework is seldom good. The St. Hilda Guild, of New York, Miss L. V. Mackrille, of Washington, and the Mowbray people of Oxford have made some fine frontals and frontlets.



An altar with a simple low reredos filled with rich brocatelle. Upon the altar are a white silk frontal and frontlet for festival use. St. John's English Lutheran Church, Ladysmith, Wis.

The frontlet is a piece of silk or brocade the exact length of the mensa, and from 7–7½ in. deep. It is affixed to a piece of heavy, unbleached linen the exact size of the mensa, and allowed to hang down over the front of the latter. The linen is held by means of a half-inch brass rod the length of the altar, and held in place by rings. If the altar stands away from the reredos, and has no retable, then the linen supporting the frontlet may be attached to the farthest edge of the mensa by means of rings.

The proper ornaments of the altar are a crucifix or cross and two candlesticks. The crucifix is generally the rule in Roman Catholic and Lutheran churches, and the cross in Anglican churches, although there are exceptions to this general observation. To place a crucifix or cross upon the altar is not a Roman Catholic custom, as is popularly believed. Before the Reformation the crucifix was almost invariably placed upon the rood-beam or over the rood-screen. The altar had but two candlesticks, and they stood directly upon the mensa, as countless engravings attest. After the destruction of the rood-screen in post-Reformation days, the custom arose among the Lutherans of Germany and the Scandinavian countries of placing a crucifix upon the altar. From there it spread to England. Several eminent British authorities condemn its use. However, a crucifix or a plain cross is so generally used upon the altar in liturgical churches nowadays that this may be looked upon as one of the present-day essentials.

Tradition calls for two candlesticks, bearing, of course, genuine candles. The custom among many Roman Catholic, and some Episcopal and Lutheran, churches, of placing a row of six tall candlesticks upon the altar, or else two tall candlesticks and two or more seven-branched candelabra, is a comparatively modern innovation. There is no harm in doing so, if the practice is admitted honestly to be a modern idea, not to be defended upon historical grounds.

Brass vases holding cut flowers are not traditional ornaments of the altar. They too, are rather modern. Brass is flashy and vulgar if too much be used, and in many a church where refined taste prevails, unostentatious vases of dull pottery are used. A missle-stand, while not an essential ornament, is a great convenience. It ought to be rather low, light enough to be moved when necessary, and provided with a swivel so that the position of the book lying upon it may be changed. The simpler and lower the missle-stand, the better.

Some Pitfalls in Supervision

By W. F. Bartels

XII. PLUMBING

THE inspection of plumbing work should start with the delivery of the first supplies delivered on the job. It is advisable that a list be compiled from the specifications, giving the various kinds of material called for. Are the cast-iron soil pipes uncoated, sound and without splits? Are they only "standard weight" when the architect has called for them to be "extra heavy"? Are the nipples of extra heavy stock as called for? These and numerous other questions will engage the superintendent's attention.

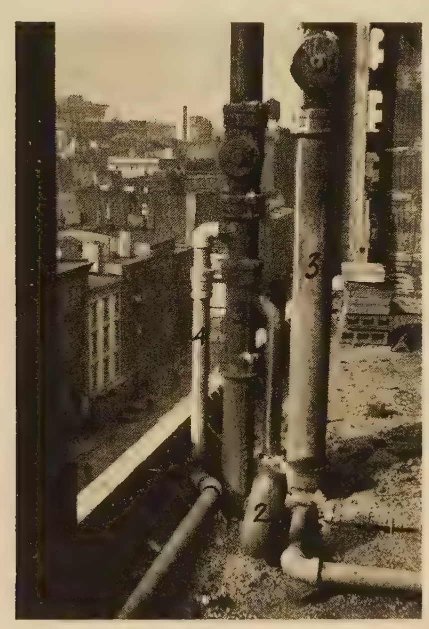
There are two general types of plumbing in use to-day. The first and more general is the one which uses cast-iron pipe for its stacks and horizontal lines. The pieces of pipe are connected by inserting one end, known as the spigot, into the wide end of the other, known as the hub. The space around the spigot is then packed with oakum and the remaining space filled with molten lead. The joint so formed is known as a caulked joint.

This type is usually found in buildings of sixteen stories or under. Above this height, screw-pipe construction is generally used. This method, as its name indicates, uses galvanized steel pipe fastened together by means of threaded connections. It must not be imagined, however, that where cast-iron pipe is used there is no steel pipe used. On the contrary, practically all the waste and horizontal vent pipes are of steel.

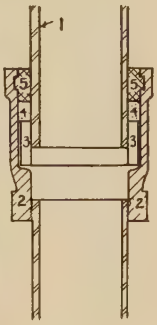
It is in the basement that most of the plumbing work will be started and here it is that close inspection work must begin. Here the cast-iron pipe will be found. It must be first well caulked with oakum, then with lead. Failure to use oakum properly often results in the lead running into the pipe and causing a stoppage. The pipes must be properly supported, or any weight thrown on them, as by a careless workman, will cause the joints to break. If they run close to the ground, stones and brick may be put under them; if much above ground, small piers should be built for them. In either case where a vertical pipe runs into a horizontal one a pier should be built to take care of the weight of the vertical pipe. The pipe should be laid so that the flow is from the hub to spigot. This is desirable in order that no solids will meet obstructions such as the end of the pipe, were it not perfect. In order to get a proper flow the pitch should not be less than one-quarter inch to the foot. A suitable place should be left to enable any one to have access to the house trap or other traps when necessary. Cleanouts are essential and should not be placed so that a wall must be torn down in order to use them. It is obvious, of course, that in a horizontal run no abrupt turns should be permitted if a free flow is to be maintained. Use long sweeps rather than Y's or TY's. And finally, before leaving the basement, it should be insisted upon that no lines be covered before being tested.

As the soil and vent lines rise above the cellar other situations arise which must be carefully checked. The horizontal lines must be properly supported. No wire or chain should be used, since this would allow the pipe to sway, with disastrous results to the joints. The vertical pipe must be firmly secured, generally by strap irons in frame buildings and special iron clamps in fireproof structures. Care must be taken that all lines have a sufficient pitch, something that is often overlooked where the pipes are above a hung ceiling and vertical space is limited. Where soil pipes are run on the floor, it is better to have the pipes blocked up for their pitch with bricks or concrete rather than wood, as the latter not only rots but in all probability will be knocked from under the pipes when the cinder fill is being placed. All leadwork coming in contact with cinder fill should be given a coat of asphaltum for protection.

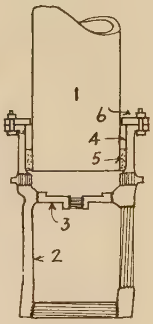
In a system of steel pipe the same general care must be taken to see that the pitch is right and the hangers and supports are sufficient. As steel pipe comes in three weights it is well to check up on which one is being installed. In addition to the difference in the weight, there is likewise a difference in the thickness of the pipe wall. Oftentimes while the pipe called for will be standard weight, the nipples used in connection with it are specified to be made from extra heavy pipe. The fittings too must be examined, particularly in out-of-the-way places. Sometimes "in order to save time" while running a galvanized line, and not having the required fitting, a foreman will put in a "black" fitting and slyly administer a coat of aluminum paint. No bushings should be allowed, except possibly in a vent line, and here they should be looked over to see that no black ones are installed if galvanized ones are called for. Where the vertical rise of soil or vent pipe is of any great length, as is the case in our larger buildings, expansion joints must be provided. These in turn should be made approachable by an access door.



The "roughing in" near the top of a modern tall building: 1—Test T's; 2—Lead bend for toilet; 3—Cast-iron soil pipe; 4—Steel vent pipe



Upper diagram, a tucker connection: 1—Pipe walls; 2—Tucker fitting; 3—Slip ring; 4—Oakum; 5—Soft lead

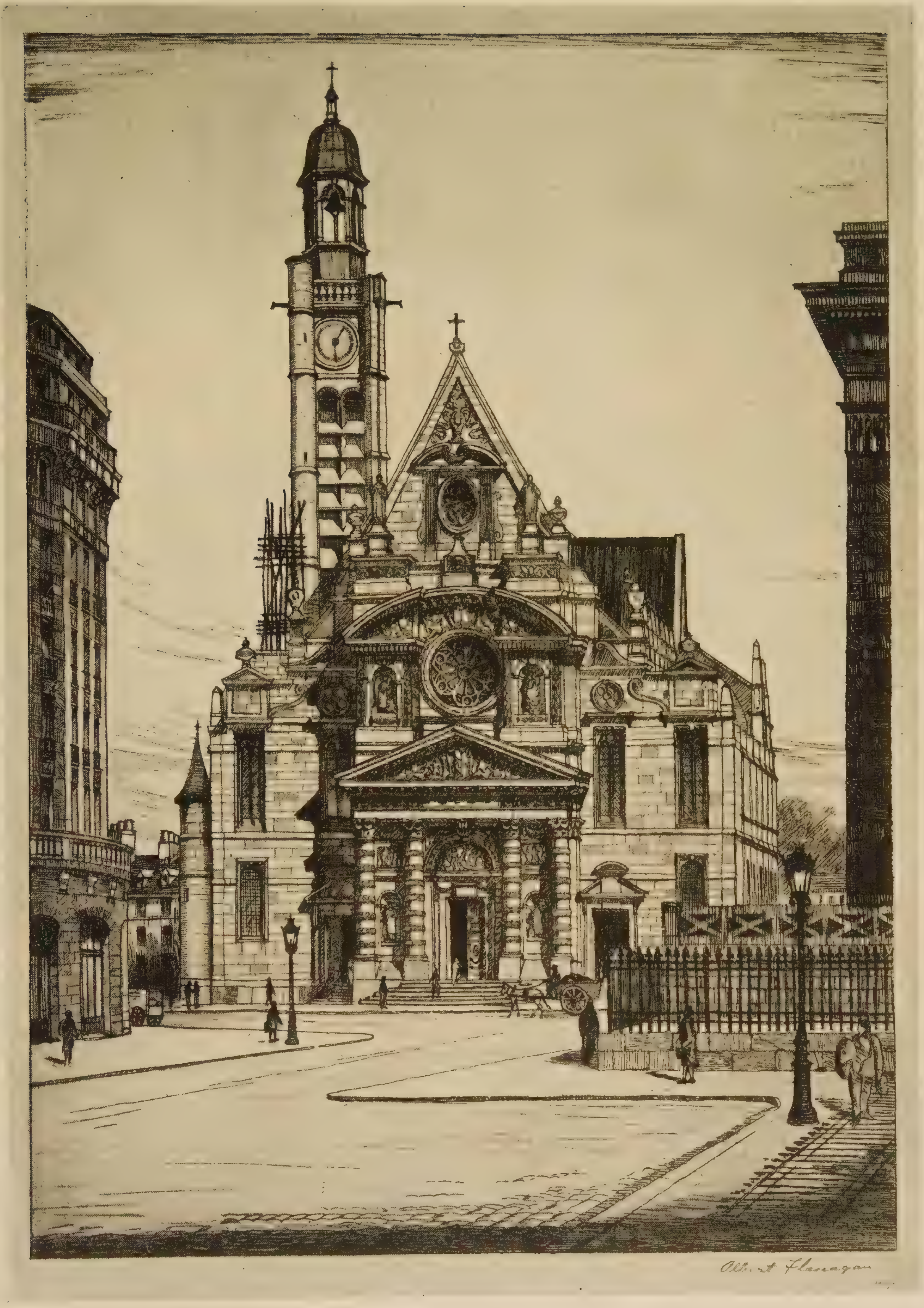


Lower diagram, expansion-joint test T, Tucker type: 1—Pipe; 2—Expansion fitting; 3—Bushing; 4—Lead caulking; 5—Oakum; 6—Flange and bolts

In order to make sure that a new system of soil, waste, and vent lines is tight, a water test is applied by the plumber. This test is witnessed in New York City by a delegate from the plumbers' union, the city plumbing inspector and often a representative of the architect. The system is closed at the bottom and filled up to the level which is to be tested. This water level may be ascertained by looking down the pipe, or located by the sound of dropping a small pebble into the pipe. It is well not to allow the water to overflow the top of the open pipe, since its running down the pipe would make difficult the detection of leaks on the lower floors. As the superintendent works down from this top point, accompanied by the plumber, he will probably hear the old story: "Of course, when in use the system will not have to withstand such a severe test as this, and it would be impossible for the water to fill it up," etc. While this may be true to some extent, no leaks should be passed. It is true that in the case of small leaks they may rust up, but they might do damage before that time. In the case of screw pipe the water will work its way through the "dope" applied at the connections and cause blisters with the "dope" as a skin. With the caulked joint in cast iron, the water is more free to trickle out, and probably more leaks will be found in this type of installation than in the screw pipe. This is at once realized when it is considered that there is practically no strength in a cast-iron pipe joint, while in a screw pipe the joint is practically as strong as the pipe itself. Then, taking into account the abuses the rough plumbing is subjected to, it is readily seen that in the cast-iron piping the percentage of leaks will be larger. However, if the leaks are only small ones they may be fixed at once by the plumber with a caulking tool.

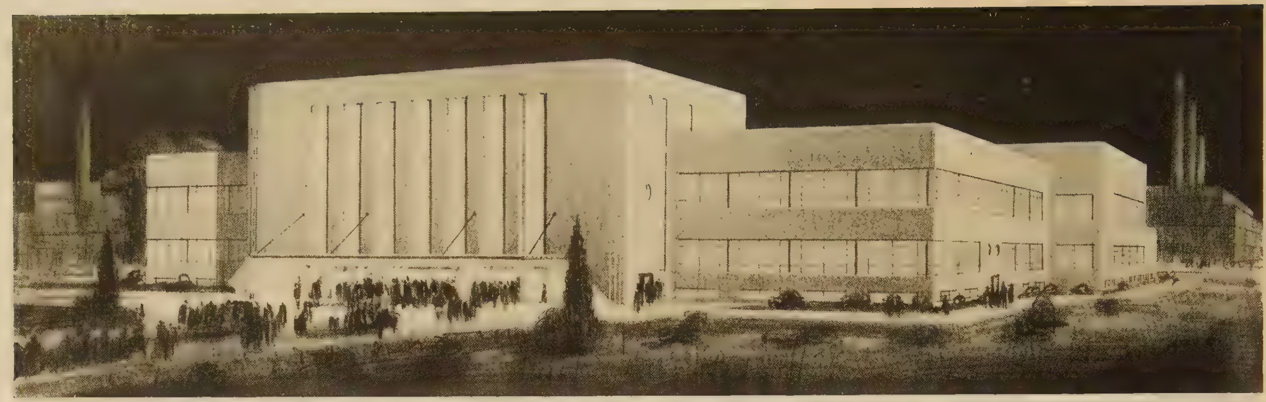
Any bag or other obstruction thrown over pipe joints in bath or toilet rooms should be removed. It is a common trick to throw a bag over a leak, spread a few partition tile over the bag and then hope that it will not be noticed. When the leak is at a tucker it should be carefully inspected. Often, in caulking, the tucker itself is split and this produces trouble later on. Likewise in the use of cast-iron pipe, the hub may be cracked by accident or improper caulking. Splits often occur in cast iron, as well as sand holes, and these are doctored up for the inspection. A blow torch and wax or candle are fair signs that a split is being fixed up somewhere in the neighborhood. It is also to be detected by the greasy look of the pipe, but the plumber may offer to file the pipe to prove it is whole. This of course will not reveal the split at all, but if the fingernail or a knife blade is probed around the suspected part, it will generally produce a small stream of water from the defective part.

When all the pipes have been examined the plumber will let the water out, and this, by pressure and amount, will show that the system has been filled up.



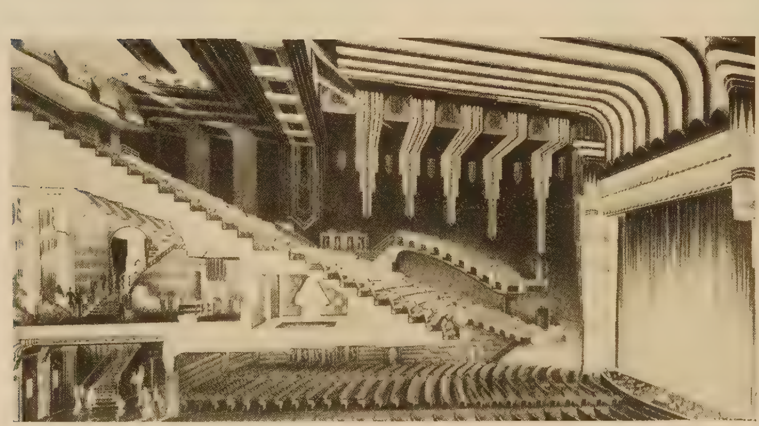
By courtesy of Harlow, McDonald & Co.

St. Etienne du Mont, Paris
From the etching by Albert Flanagan



Socialized dining-room to be erected in Russia, which will supply 65,000 meals daily on a cafeteria basis. Holabird & Root, architects

Architectural News in Photographs

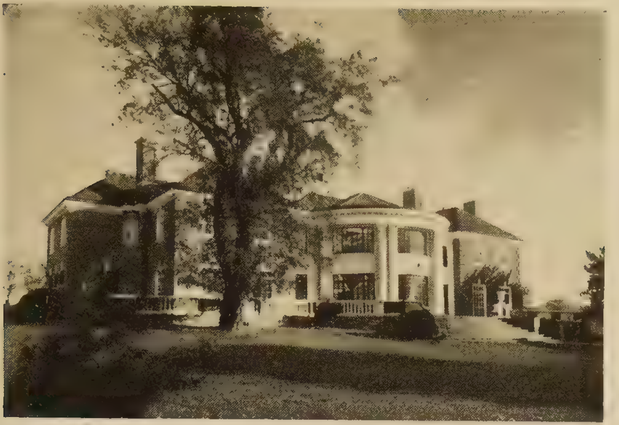


Interior of the new Earl Carroll Theatre, New York City, which is now under construction, to seat about 3,000. Thomas W. Lamb, architect; interior decoration by Joseph J. Babolnay

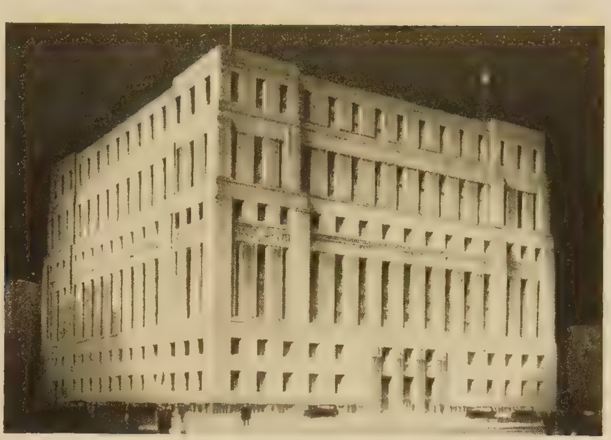
A new shop in San Francisco of green terra-cotta, green bronze, and glass. Albert F. Roller, architect

The proposed Hotel and Institutional Mart Building which is nearing completion in New York City. J. E. R. Carpenter, architect

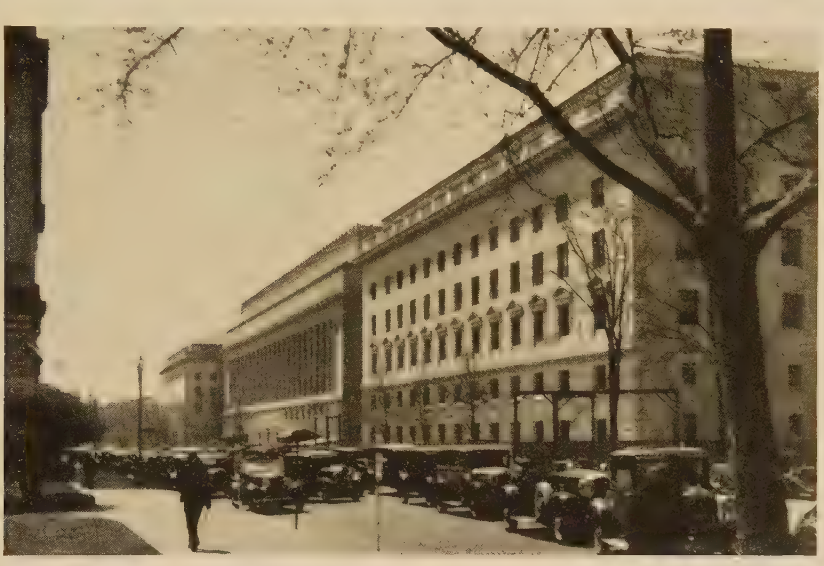
The proposed Franklin K. Lane High School for Brooklyn, which will cost more than $3,000,000, and accommodate 5,100 pupils. Walter C. Martin, architect



Mr. William F. Raskob's house in Wilmington, Del. The portion between the wings is roofed with glass. E. William Martin, architect

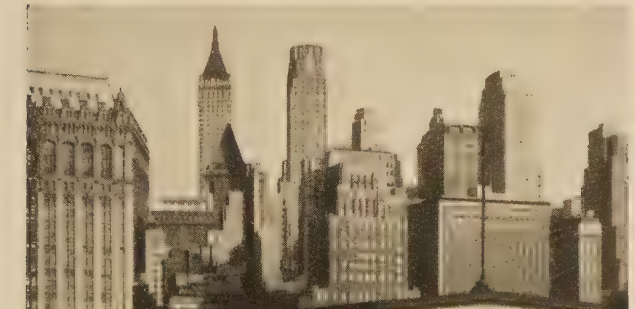


The proposed Federal Building for Detroit, costing $5,650,000, to be completed this fall. Robert O. Derrick, Inc., architects

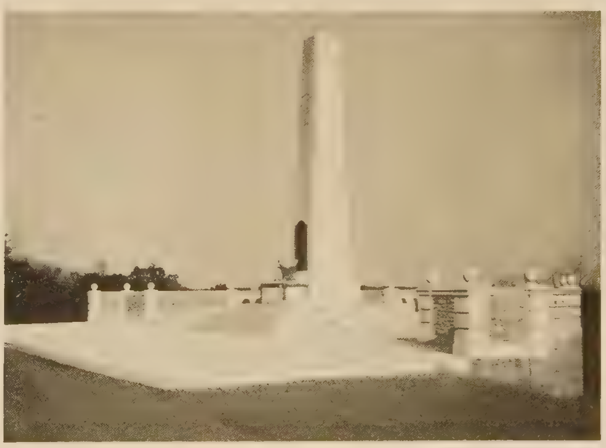


A progress photograph of the new building covering three whole blocks for the Department of Commerce, Washington, D. C. York & Sawyer, architects

The new Irving Trust Company Building at 1 Wall Street (centre tower in group) takes its place in the New York skyline. Voorhees, Gmelin & Walker, architects



World War Memorial in New Brunswick, N. J., dedicated on the last Armistice Day. Alexander Merchant, architect; F. Luis Mora, sculptor



LITTLE KNOWN ENGLAND. By HAROLD D. EBERLEIN. 132 pages, 6½ by 9 inches. Illustrations from drawings, photographs, and a map. Philadelphia: 1930: J. B. Lippincott Co. $5.

The England through which Mr. Eberlein takes the reader is little known even to the English people, much less to the American tourist. These unfrequented byways take us from the hills and mountains of the Welsh border to the fens of Norfolk, covering the greater part of Shropshire and Herefordshire, and portions of Gloucestershire, Oxfordshire, Berks, and Bucks.

COLORING, FINISHING, AND PAINTING WOOD. By A. C. NEWELL. 419 pages, 6 by 9 inches. Illustrations from photographs and color chart. Peoria, Ill.: 1930: The Manual Arts Press. $3.50.

The author is professor of Industrial Arts, Illinois State Normal University. His book has been prepared mainly for use in educational institutions, but it has a fund of well-arranged and useful information for the specification writer.

STRESS DISTRIBUTION IN WELDED STEEL PEDESTALS. By JAMES H. EDWARDS, H. L. WHITTEMORE and A. H. STANG. 9 pages, 6 by 9 inches. Illustrations from diagrams and photographs. Research Paper No. 232. Reprint from Bureau of Standards Journal of Research, Vol. 5, October, 1930. Pamphlet binding. Washington: 1930: U. S. Department of Commerce, Bureau of Standards. 10 cents.

ARCHITECTURAL DRAWING, PERSPECTIVE AND RENDERING. A handbook for students and draftsmen. By CYRIL A. FAREY and A. TRYSTAN EDWARDS. 96 pages of text and 56 plates made from photographs and drawings in various media, including color, 7¼ by 9¾ inches. Cloth binding. Printed in Great Britain. New York: 1931: Charles Scribner's Sons. $6.

On the practical side of the architectural draftsman's education, discussing media and materials, composition, lighting, shadows, color, architectural entourage and accessories, sketching, competition drawings, and commercial work. Illustrated with well-chosen examples in all of the various fields.

HOW TO JUDGE A HOUSE. Report of the Subcommittee on How to Judge a House of the National Committee on Wood Utilization. 85 pages, 6 by 9 inches. Illustrations from photographs and diagrams. Pamphlet binding. Washington: 1931: U. S. Department of Commerce Wood Utilization. 10 cents.

METAL PLATE LITHOGRAPHY FOR ARTISTS AND DRAFTSMEN. By C. A. SEWARD. 69 pages, 8¾ by 11¾ inches. Illustrated from diagrams and lithographs. Cloth binding. New York: 1931: The Pencil Points Press, Inc. $3.50

Defections from the architectural ranks into the fields of lithography and etching have been rather numerous in recent years; they are likely to be increasingly so as readers learn from C. A. Seward how simple the technique may be made. Mr. Seward is explicit with his text and diagrams, and includes an interesting selection of lithographs by Rockwell Kent, Ernest Born, John Richard Rowe, himself, and others.

ARCHITECTURAL DETAILS OF NORTHERN AND CENTRAL SPAIN. By GERSTLE MACK and THOMAS GIBSON. 146 plates, 10¼ by 13¼ inches. Illustrated from 55 photographs and 104 measured drawings. Cloth binding. New York: 1931: William Helburn, Inc. $16.

A companion volume to "Architectural Details of Southern Spain," published two years ago. The authors have been most generous in the number of measured drawings and the care and thoroughness with which they have been made. An excellent volume to stand on the shelf beside Prentice.

TREATMENT OF WATER FOR ICE MANUFACTURE. A report of an investigation conducted by The Engineering Experiment Station, University of Illinois, in co-operation with The Utilities Research Commission. By Dana Burks, Jr. 114 pages, 6 by 9 inches. Illustrations from photographs and diagrams. Pamphlet binding. Urbana, Ill.: 1931: The University of Illinois. 60 cents.

EARLY DOMESTIC ARCHITECTURE OF PENNSYLVANIA. By ELEANOR RAYMOND. Introduction by R. BROGNARD OKIE. 158 plates, 9¼ by 13 inches. Illustrations from photographs and measured drawings. Cloth binding. New York: 1931: William Helburn, Inc. $20.

Unquestionably the eastern part of Pennsylvania, particularly the counties of Berks, Lancaster, Montgomery, and Chester, hold the remains of one of America's most interesting architectural periods. The honesty and forthrightness of the old stone barns, smoke-houses, and mansions never fail to impress themselves upon the architectural observer. Miss Raymond has photographed this large field more fully than had hitherto been attempted, and, most fittingly, R. Brognard Okie, who has done such notable work in the restoration of these early works, contributes an introduction.

The Editor's Diary

Thursday, April 23.—Grosvenor Atterbury has for twenty or twenty-five years been working along the lines of experimental standardization of small buildings. At The League to-day he pointed out very clearly the fact that standardization of this form cannot, if intelligently used, interfere with æsthetic considerations. Standardization, however, in his opinion, should be applied to the parts, not to the whole structure. The ideal material of which large wall slabs may be built in the factory has not yet been discovered. It must be lighter that ordinary concrete, and it must also afford the possibility of nailing other materials to it inside. Judging from the interest which the large gathering of architects showed, the time is at last ripe for a wide acceptance of the principle that is governing all of our younger industries.

Friday, April 24.—At The League luncheon to-day—the last in the series held during the architectural show, H. I. Brock, of the *New York Times*, conducted a discussion on the subject of architectural criticism, holding, for his part, that what we need and are getting, in increasing quantity at the moment, is criticism by the layman. He feels that it would be a mistake to attempt to train critics, for they would then be above the level of public appreciation, and this level, after all, is the one on which architecture will be judged. There is, however, evidence that at the moment the public has turned avidly to architecture as something which it has suddenly found of absorbing interest.

To-night the annual dinner of The Architectural League of New York was held in celebration of the fiftieth anniversary of The League's founding. Dr. John H. Finley, Associate Editor of the *New York Times*, presided as toastmaster, having been introduced by Raymond Hood, the retiring president, after the awarding of the annual medals, of which the details appear elsewhere. The arts of Sweden and of Mexico and our cultural relations with these two countries were subjects of toasts by His Excellency Wollmar F. Boström, the Swedish Minister, and The Honorable Enrique D. Ruiz, Mexican Consul General. James Monroe Hewlett, Kenneth M. Murchison, Dean Everett V. Meeks, and Harvey Wiley Corbett spoke upon architecture in America and The League's share in its progress.

Monday, April 27.—C. H. van der Leeuw, of Rotterdam, speaking at the New School for Social Research tonight, said that modern architecture is not a particular style, but rather an attribute of mind. "It reconciles in design the human rights of those who live or work in the building, its technical and practical uses, and the æsthetic requirements of the artist. Similarity in style in the work of architects in different countries arises out of similarity of conditions of modern life and industry." It nearly, but not quite, constitutes a good definition: "The æsthetic requirements of the artist" might well be changed to read, "The æsthetic requirements of those who live in the building and those who see it."

Thursday, April 30.—It is becoming harder and harder for the average layman to know what he is getting in a house, whether he builds it himself or buys it already built. "How to Judge a House," published by the National Committee on Wood Utilization, Department of Commerce, will help him if the house is not too large. It becomes more and more evident, however, that only by some national system of appraisal and rating will it be possible for any one not an expert to know what he is getting. This is unquestionably one reason why the banks are slow to make building loans—there are too many factors into which they must look before being able to judge the risk. If, on the other hand, a national appraisal organization could inspect and certify that a building conformed to one of, say, three definite grades, the banks would have to consider only the personal risk and the location.

Friday, May 1.—Having spent two whole days in moving my lares and penates, I want to go on record as being opposed to the attic in principle. Though it has been hallowed by song and story, and though a skilful writer can always bring up a touching picture of rummaging through an old attic while the rain patters on the shingles overhead, the attic is a delusion and a snare. Into its cavernous depths are put countless things that were better destroyed—the sort of thing that is treasured against the possible day when it may again be of use. It never is, and it remains there only to annoy the owner when he is finally forced to move it and all its neighbors.

Saturday, May 2.—The Empire State Building was yesterday opened officially with fitting ceremonies in which ex-Governor Smith, as well as the present Governor, Lieutenant-Governor, both United States Senators from this State, and the Mayor of New York, attended. Even President Hoover was drawn into the occasion by pressing the key to light the building. Here then is put into use the tallest structure thus far built by man—twelve hundred fifty feet, housing a city of twenty-five thousand tenants, and possibly forty thousand people coming and going to transact business therein. For the first time in history the one-hundred-second floor is reached by elevator. Some of the other startling figures are: ten million bricks used; over six thousand windows; seven hundred thirty tons of aluminum and stainless steel built into the outer walls; sixty thousand tons of steel in the frame; sockets for three hundred fifty thousand electric lights; the first steel for the foundations set in place March 17, 1930. The structure was but a little more than a year in building.

Sunday, May 3.—Edward H. Davis, one of Rayne Adams's friends since his college days, read a few lines at the funeral which throws a brilliant gleam upon Rayne Adams's independence of spirit.

"Rayne Adams never thought the problem of death as large or as important as the problem of life. To that he gave sincere and earnest thinking. His living, always personal, frank, and direct, was a simple and unforced expression of a will that knew itself and felt no dependence on common custom as a guide. It was a loyalty—always honest, to the point of bravery, and often sensitive, to the point of sacrifice—a loyalty to his identification of truth. The rule was simple—being profound—and, as is always so, the application was a test of complex alternatives. Here is where most men capitulate—by avoidance, or concealment, or compromise. He did not capitulate. He knew no hypocrisy. He would not compromise. Thus he stood to us all as a pre-eminent figure—notable always, the more lovable as the more known, and admirable in that love.

"I have a paper which he wrote some years ago in contemplation of this day. One paragraph I will read.

"'I believe in democracy; in individualism in thought and work. I believe in Secularism. I believe that the foundation of all society is the biological fact of sympathy; that social betterment depends upon the extension of sympathy; and that this extension of sympathy comes only through the widest education; and that, finally, this education, to be effective, must be free; that is, it must be the expression of free thinking on all and any subjects. I "accept all religions and believe none." As for the question of personal immortality, or "life after death," this matter has never interested me greatly so far as I am personally concerned: if "one" lives after death, it is, after all, only a fact of nature, and in no way, to my belief, is it dependent, as a proposition, upon any system or theory of supernaturalism.'"

. . . .

"To Rayne's spirit, still pervasive and always controlling, we need to add no word of commentary. With each one of us, he built a strong motive in our lives. It stays, ever fresh, in our love for him. And that love shall last so long as we live.

"In accordance with his wish, we now consign his body to the flames, that it may return to the elements whence it came."

Monday, May 4.—A. Barlow of Miami, Fla., sends me an earnest plea to aid in the prevention of unnecessary stairs. Public buildings, churches, universities, hospitals, railroad stations, are more than likely to present to the traveller, the invalid, and the aged, more stair-climbing than is absolutely necessary. The chain-stores have the right idea: "Every step loses a customer."

Tuesday, May 5.—The steps leading from the arcade into the main waiting-room of the Pennsylvania Station, New York City, have always interested me. In the first place, McKim, Mead & White used the rather uncommon form of a slightly sloping tread; and in the second place, these treads are of travertine which wears down rather quickly. From time to time the treads have had to be planed off to a new surface to level them. This process having been carried out two or three times, the treads became too thin and are now being replaced. Instead of attempting to put in a steel and abrasive tread, as a practical expedient, the railroad company has held to the architects' original design, and is replacing the treads with travertine.

Wednesday, May 6.—Wallace Harrison, of Corbett, Harrison & MacMurray, joined the architectural editors at lunch to-day, and roused in all of us some of his own enthusiasm for an effort that is now being made to discover a better way of teaching architecture. This effort is now in its early stages at the New School for Social Research in New York. For the present, only such students are accepted as have the ability to draw. The first problem is to design an opera house. All that is specified in the programme is that the plot is of such and such a size, and the house is to seat thirty-five hundred persons. The class spends very little time in drawing, but much time in finding out from the best available sources what an opera house should, or might, be. After a few preliminary studies drawn in plan, the students turn to clay, and model the scheme inside and out. The discussions among the group and its outside advisers leave little unprobed. One of the first questions to arise was, "Will opera in its present form continue to be presented?" Another, "What is the relative importance of sight lines and acoustic properties?"

After lunch, walked over with Harrison to see the latest development of the Rockefeller Metropolitan Square scheme which, changing day by day, is gradually settling into its logical and inevitable form.

Thursday, May 7.—F. Ellis Jackson, of Providence, R. I., emphasizes the importance of his state as a breeding-place for architectural genius. Two out of the three winners of our recent competition are draftsmen in his office in Providence, and the third winner had also lived and worked in that city at one time. There is more to the evidence than this: Raymond Hood and Ralph Walker, two of the members of the Advisory Board of Consulting Architects for the coming Chicago Fair, are Rhode Islanders, Hood having come from Pawtucket, and Walker from Providence.

Monday, May 11.—A letter from E. N. Jencks, Jr., of *The Springfield Republican* brings up some interesting points regarding architectural criticism—whether it should offer the layman's point of view or the professional's, and just how far the critics are justified in criticising architecture from the point of view of social theories or radical artistic formulæ.

It seems to me that architectural criticism falls into two very distinct phases. One of these is professional criticism by professionals. The other is criticism for, and by, the layman. The two cannot be interchanged as to object or authorship. Most assuredly the public is entitled to say what it thinks about contemporary architecture—after all, the public has got to live with it. Of course, the question always arises whether any layman's individual criticism can be of much value to other laymen; every man will have his own reaction to a building just as he does to a painting or to a musical composition. He is entitled to this, but there is no particular benefit in his arguing the rest of the people into his own point of view.

Tuesday, May 12.—Captain John Noel, who was one of the intrepid band who attempted the ascent of Mt. Everest several years ago, lunched with a number of us to-day, and showed us the pictures that he has just brought back from the Valley of Kashmir in India—the spot that is acclaimed by many travellers as the most beautiful valley in the world. Here lived the Moguls of India, one of whom built, as a tomb for his queen, the Taj Mahal. Captain Noel's photographs of the Taj by moonlight, and by sunlight, are the most stirring productions of photography I have ever seen.

Thursday, May 14.—Frederick Heath, Jr., an abridgment of whose report is printed on page 47, focuses the attention of all who build upon the desirability of a common unit of dimension in masonry construction. This job of trying to make brick of various kinds bond together or with blocks, or terra-cotta, or stone, or around window-boxes, steel sash or flues, is becoming more and more hopeless with the growing number of manufacturers' sizes, and the lack of co-ordination among the various crafts. Mr. Heath shows us an obvious way out.

Sunday, May 17.—Timothy Cole, probably the foremost master of wood engraving that America has produced or will produce, died to-day at his home in Ferris Lane, Poughkeepsie, N. Y. He was seventy-nine years old. Away back in 1913, Mr. Cole was elected to the American Academy of Arts and Letters, taking his place with the painters, John La Farge, Abbott H. Thayer, and Elihu Vedder, and with his contemporaries in sculpture, Augustus Saint-Gaudens and Daniel Chester French.

Monday, May 18.—News from Rome tells of a heated discussion now raging in the daily newspapers between those upholding traditional Italian architecture and those fighting for the ultra-modern. The former band is led by the Italian Academician, Marcello Piacentini, and the latter by a group of young Milanese architects who call themselves "Rationalists," and who make up in ideas and in enthusiasm what they lack in experience. Both sides are jockeying vigorously for Mussolini's support.

Tuesday, May 19.—Berlin's German Building Exposition is showing a copper house which can be delivered by truck, and set up within twenty-four hours. It is available in several models, of both one and two stories, costing from $1,800 to $2,500, delivered, the foundation to be supplied by the owner. It is a sectional job, the walls being about two inches thick, of copper on the outside, and sheet steel within, separated by insulating material. The exterior is allowed to develop its own patina, the interior being colored as desired. Apparently front-door bells may be discarded, for if one drums lightly with his fingers on the exterior wall surface, the booming inside the house will awake the soundest sleeper.

Thursday, May 21.—Bustling around with many last-moment details in the effort to leave the editorial offices in order during a month's absence. The architectural voyageurs are off to-day for Paris. The flagstaff with its bronze base has gone ahead by another ship. It only remains for the fifty members of the delegation who will present it to the Ecole des Beaux-Arts, to bring themselves after it in as good order. At four this afternoon we sail on the *American Banker*.

NUMBER XIV
IN A SERIES
OF

Working Drawings

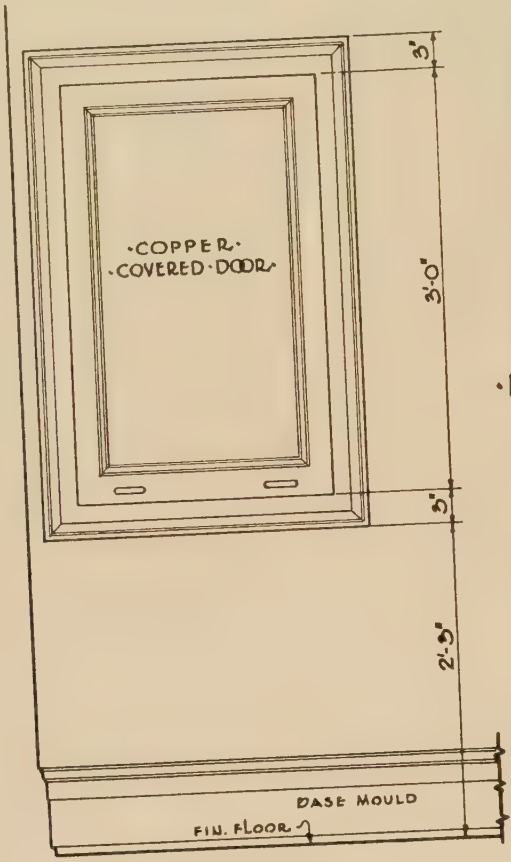
By Jack G. Stewart

This series, in which one drawing will appear each month, is designed to cover the smaller practical problems that confront the architect in his day's work. The subjects chosen are those which, while not uncommon, call for some experience and knowledge of approved solutions. Next month the subject is a Mantel.

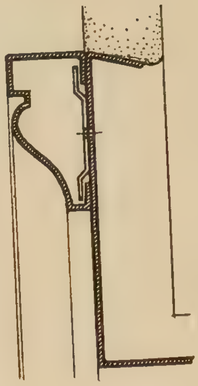
ARCHITECTURE
CHARLES SCRIBNER'S SONS

PREVIOUS SUBJECTS IN THIS SERIES

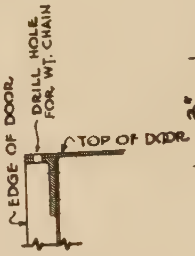
I. Flagpole Holder on an Exterior Wall
II. Radiator Enclosures
III. Cigar Sales Counter
IV. Woodwork in a Library
V. Built-in Kitchen Cupboard
VI. Various Trims and Mouldings
VII. Telephone Booth
VIII. Men's Toilet
IX. Window Spandrels
X. Circular Stair for a Residence
XI. Detail of Metal Stair Construction
XII. Detail of Elevator Construction
XIII. Detail of Folding Partition

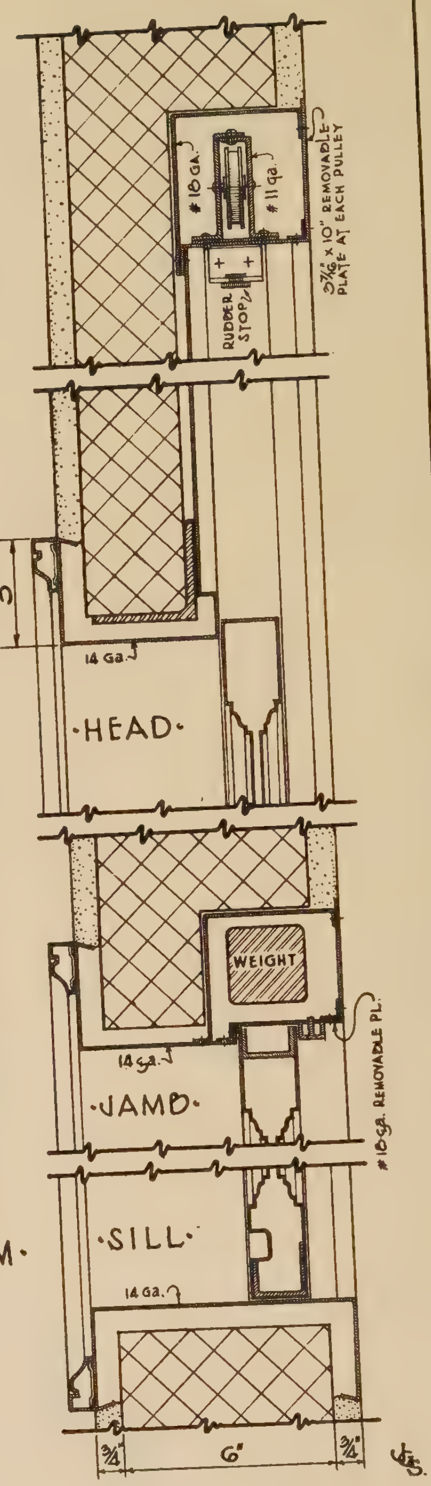


·ELEVATION·

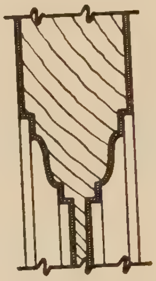


·METAL·TRIM·

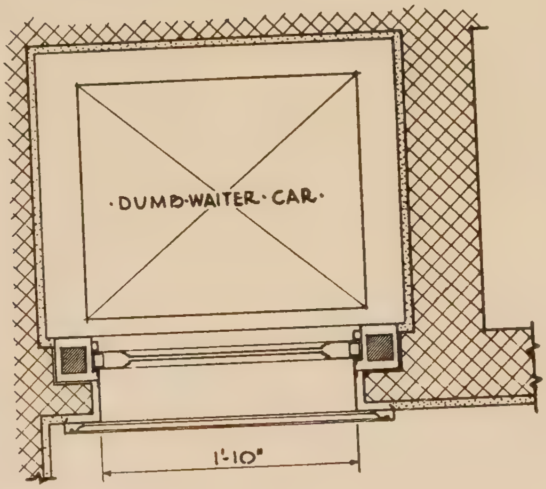




·SECTION·



·DOOR·TRIM·



·PLAN·

·COUNTER·WEIGHT·SLIDE·DOOR·FOR·DUMB-WAITER·

·PLATE·No·14·

CONTACTS

DEVOTED TO A BETTER UNDERSTANDING OF THE BUSINESS SIDE OF ARCHITECTURE AND ITS RELATION TO THE INDUSTRIES

A Standard Unit of Dimension for Masonry

By Frederick Heath, Jr.

Abridged from the Journal of the American Ceramic Society

MASONRY walls in modern construction are complicated systems in which a large number of elements are combined. In smaller buildings these elements include not only the different kinds of brick, structural tile, cement block, flue lining, stone, and terra-cotta, but inserted in the walls are window and door frames and various devices such as coal chutes and cabinets. Walls must also provide chases for pipes and conduits, and flues for ventilating ducts. In the larger skeleton type of building the masonry must be even further coordinated with the dimensions of the steel or reinforced concrete frame.

At present there is very little coordination between these elements of a wall system. Some of the industries producing wall materials have adopted independent standards for simplicity of manufacture, but there is no generally recognized common standard which applies to the dimensions of these products when combined in use.

For instance, the size of common brick and rough-face brick is standardized at 8 inches by 2¼ inches by 3¾ inches. Assuming these bricks are laid in ½-inch joints, the horizontal wall dimension, centre to centre of joints, is 8½ inches. The natural limitation of dimension is a half brick, and the wall can be constructed in multiples of 4¼ inches. Vertically, the courses are 2¾ inches, centre to centre. Thus an opening in the masonry is most conveniently constructed only when dimensioned in multiples of 4¼ inches horizontally and 2¾ inches vertically. Window or door frames which do not conform to such sizes of openings are inefficient in use in brick masonry walls because of the cutting and fitting required of the mason.

Most standardization of dimension in the production of metal and lumber window-frames has been based on standardized sizes of glass lights rather than any relationship to convenient masonry dimensions. Standardized steel sash for factory buildings are based largely on varying combinations of either 12 inches by 18 inches or 14 inches by 20 inches glass size. The over-all dimensions of standardized frames for either metal or lumber sash harmonize with masonry dimensions only by coincidence. Such coincidences are not common, and in practical construction the openings, as indicated on plans, are juggled and fudged, and brick joints are stretched or tightened, or the brick are cut; all in a wasteful effort to combine these two materials which do not harmonize in dimension.

The dimensions of lumber box frames for double-hung windows are a heritage of all frame construction. A standard box frame is 5¼ inches in depth, which is the correct dimension when inserted in a frame wall with 2-inch by 4-inch studding. The width and height of the frame were immaterial because, in any case, lumber sheathing had to be sawed to fit around the frame. To insert the 5¼-inch box frame in an 8-inch masonry wall involves expensive complications. The masonry should overlap the box sufficiently to provide for weather protection. Unless the wall is furred on the inside, which increases its thickness to about 10 inches, this overlap must be constructed in the space outside of the 5¼-inch box, which is about 3¼ inches. This is less than the width of a brick, and consequently all the brick at each jamb must be clipped by the mason in order to provide sufficient space for the box. When the wall is of structural tile or concrete units, special jamb shapes are usually provided, at considerable trouble and expense, in order that the traditional lumber dimension of the frame may be accommodated.

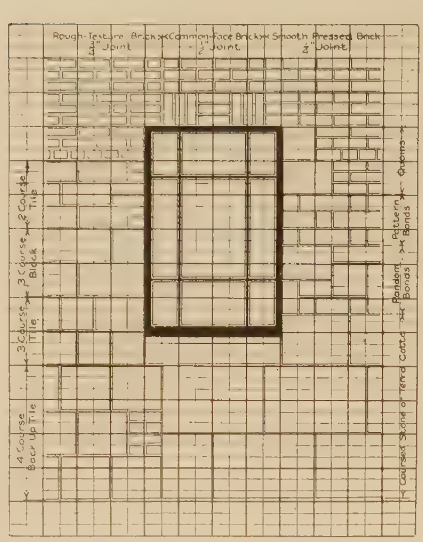
Co-ordination to a limited degree has developed between face brick and the larger units, structural tile, concrete and cinder block, which are commonly employed for backing up face brick. The prevailing standard of vertical dimension for back-up units is based on the most common practice of laying 2¼-inch brick in ½-inch bed joints. Units which back up two courses of face brick are 5 inches high, those which back up three courses are 7¾ inches, and the units which match with four courses are 10½ inches vertically. These are average dimensions, and under some conditions special back-up units must be made with slightly larger or smaller dimensions in order to bond properly with brick facing.

The thickness of the joint used in laying face brick will vary, depending upon the desire of the architect or the type of brick. Basically, the type of brick governs, and usage has developed characteristic joint thickness corresponding to each type. The natural beauty of rough texture brick is most apparent when wide joints are used. The refinement of pressed or smooth-face brick calls for the finely drawn lines of narrow joints. Joint thickness is quite appropriately related to the fineness or coarseness of the brick texture, and architects consciously or unconsciously observe this law. It would seem logical and possible, therefore, to consider the brick and its joint together in arriving at a standard unit—bricks used with a wider joint being themselves made correspondingly smaller.

Brick sizes cannot be considered without joints, and window sizes cannot be independent of the masonry in which they are built. For true standardization, all materials that are part of, or are built into, masonry walls must be dimensioned so as to harmonize with each other.

The nature of brickwork is such that a common unit of measure can be applied to three brick thicknesses plus three joints, two brick widths plus two joints, or to one brick length plus one joint. This plan for standardization is based on this relationship, assuming that it can be made exact, and that the unit of wall dimension can become a standard measure in terms of inches or feet. The measure is identical for the length, width, and height of walls, and it is suggested that the term "unit" would be appropriate. The architect could design his masonry in "units" with assurance that standard masonry materials, windows, doors, etc., would fit into his design in an efficient manner. To give greater latitude in design, the unit could be divided into half units in the horizontal plane or into third units in the vertical direction without a great sacrifice in efficiency. For instance, a whole unit may give a sufficient variation in window heights, but it may be desirable to use a half unit as the increment of measure for window widths. Standard masonry would conform satisfactorily to half-unit dimensions in the horizontal direction.

The object of this paper is to present a constructive plan whereby masonry walls may be standardized on a common unit of dimension. It would be presumptuous to suggest that such a unit should be 8 inches, 9 inches, 20 centimetres, or any other constant value. The unit must be some constant, however, and the success of the plan depends upon its universal recognition and use. Architects and engineers, as well as building-material manufacturers, will have opinions to offer on this subject, and it is hoped that the discussion may point toward some common unit which can be generally accepted as a standard.



A graphic representation of the universal application of a standard "unit" of dimension for masonry, through the use of which brick, blocks, tile, windows, and doors would fit together without cutting and patching

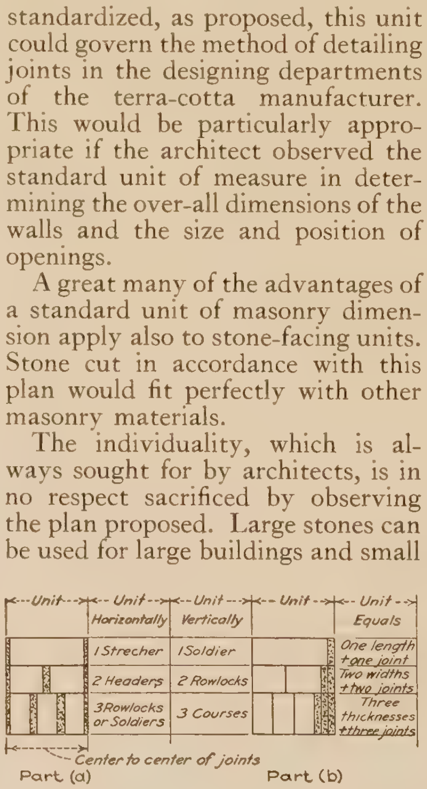
To fit into the scheme of standardized masonry, as herein proposed, blocks and tile would be dimensioned according to the following rule, in which x represents any whole number such as 1, 2, 3, 4, etc.:

Lengths = x half units — one joint
Widths = x half units — one joint
Heights = x third units — one joint

With "units" of wall dimension standardized, as proposed, this unit could govern the method of detailing joints in the designing departments of the terra-cotta manufacturer. This would be particularly appropriate if the architect observed the standard unit of measure in determining the over-all dimensions of the walls and the size and position of openings.

A great many of the advantages of a standard unit of masonry dimension apply also to stone-facing units. Stone cut in accordance with this plan would fit perfectly with other masonry materials.

The individuality, which is always sought for by architects, is in no respect sacrificed by observing the plan proposed. Large stones can be used for large buildings and small stones for small buildings, so that scale will be preserved. Stones may be laid up in narrow courses or wide courses, and the stone faces may range from square to long and narrow rectangles, all according to the architect's desires and objective in his design.



A rule proposed for brick sizes; the brick and its joint must be considered together

With the unit plan of dimensioning, masonry openings would vary in size in definite increments of measure that might be readily observed by manufacturers of windows and doors. Not only could there be co-ordination of over-all dimensions of width and height, but also in thickness or depth. Box frames would fit perfectly in their three dimensions, and the present costly patching of the masonry would be eliminated.

Since the masonry walls surround the building, the unit of measure of the walls more or less automatically standardizes the dimensions of such materials as joists, beams, girders, interior columns; in fact, all the major structural elements of the building. There could also be standard lengths of pipe and conduit, ventilating ducts, mail chutes, wood or metal trim, and other appurtenances of building construction.

Standards which are not general in their application are sometimes difficult to enforce. Standards broad in their scope, and which affect a number of industries, become quite permanent when once introduced. The standard proposed has the advantage of affecting a large number of industries and professions.

It is seldom that standard or stock materials are conducive to good architectural design. This plan does insure perfection of design. A recognized principle of architectural design is to proportion masses with simple ratios and to have similarity in the proportions of different-sized areas. This plan makes it possible to carry these true proportions of areas down to the details of the design, such as masonry-jointing and window-glass size.

Architects and engineers will make a substantial saving in the preparation and dimensioning of plans. Manufacturers will save the greater part of the cost of special engineering drawings, which are usually submitted for approval. Standard drawings dimensioned for checking will be all that are necessary with a standard unit of dimension.

ARCHITECTURE'S PORTFOLIO OF

WEATHER-VANES

THE FIFTY-SEVENTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

Forthcoming Portfolios will be devoted to the following subjects: Bank Entrances (August), Urns (September), Window Grilles (October), China Cupboards (November), Parapets (December), and Concealed Radiators (January). Photographs showing interesting examples under any of these headings will be welcomed by the Editor, though it should be noted that these respective issues are made up a month in advance of publication dates.

❖ ❖ ❖ *Subjects of Previous Portfolios* ❖ ❖ ❖

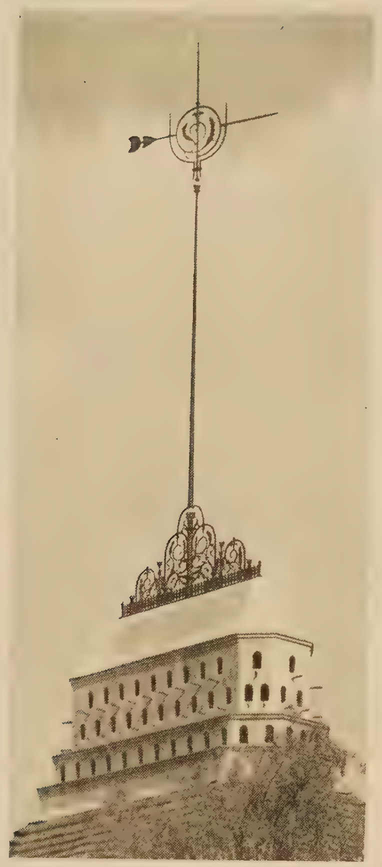
1926–27
DORMER WINDOWS
SHUTTERS AND BLINDS
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

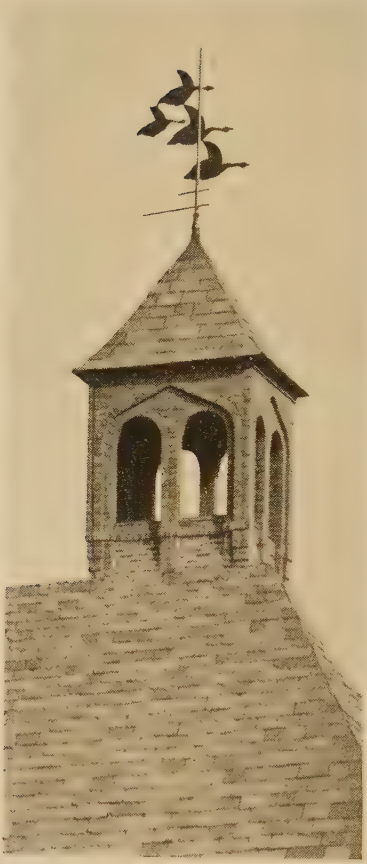
1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

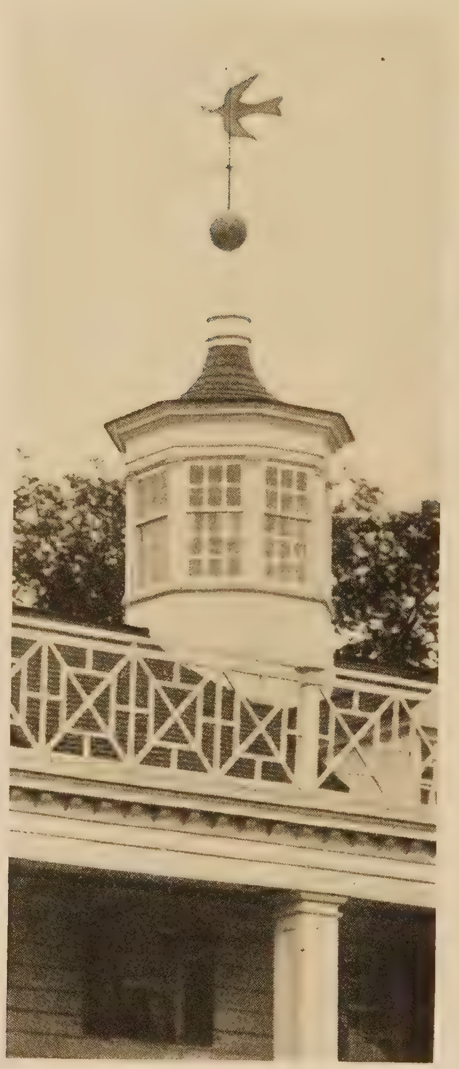
1931
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES



Herman Brookman; Oscar Bach

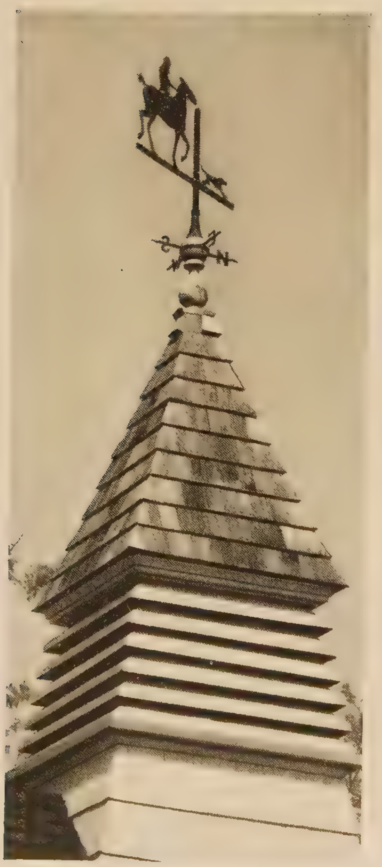


Andrew J. Thomas

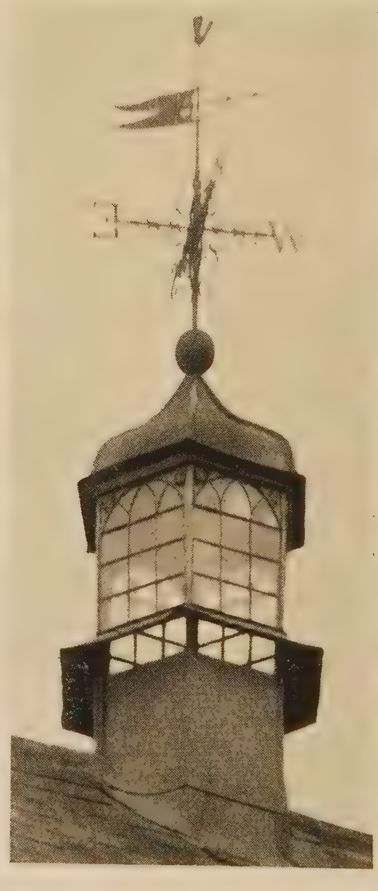


Courtesy, Copper & Brass Research Association.

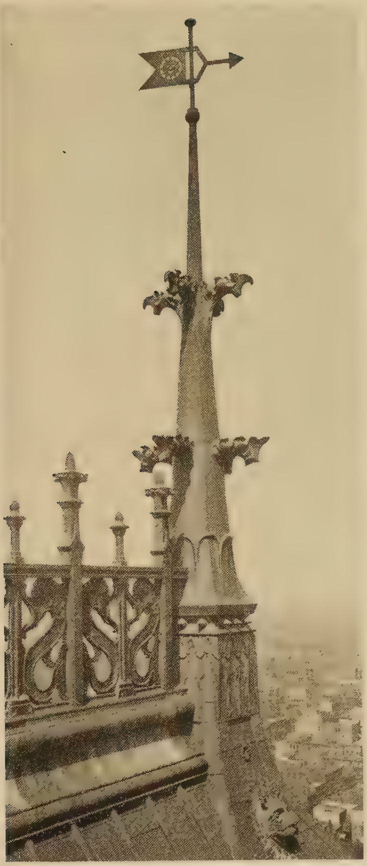
Mount Vernon



Treanor & Fatio

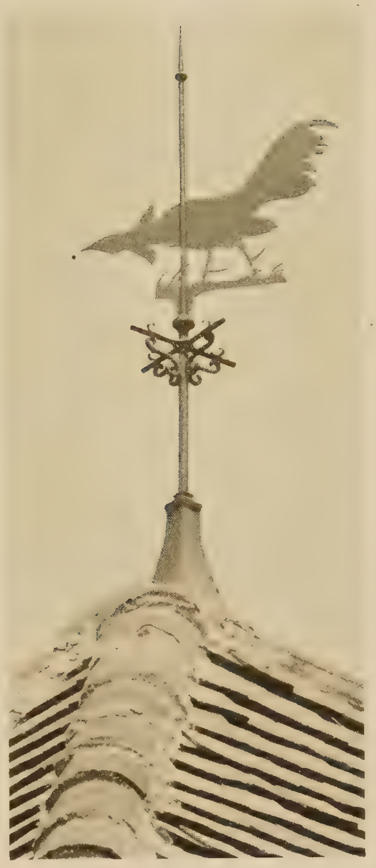


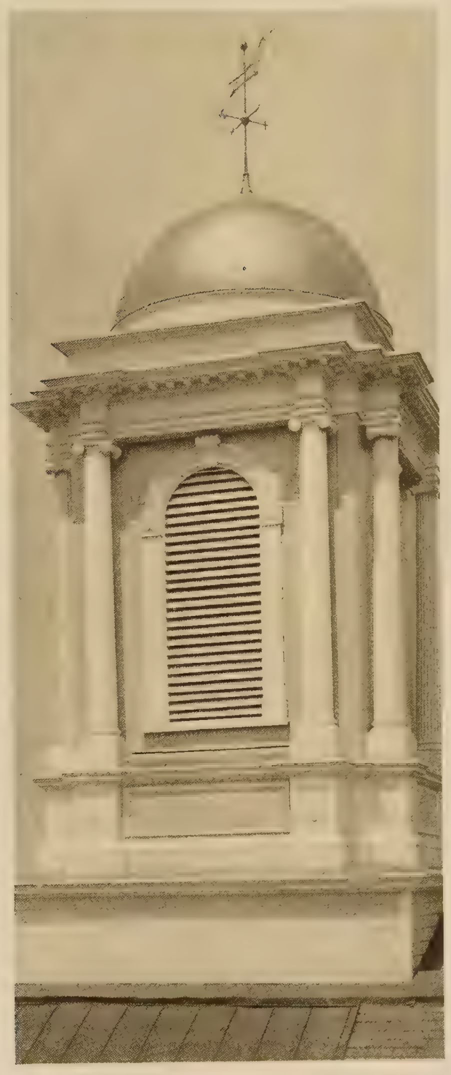
Old barn of Russell House,
Broadway, Worcestershire



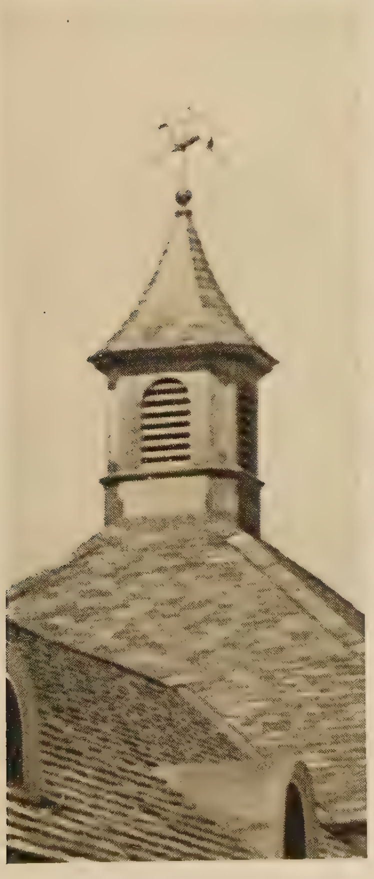
Cass Gilbert

Lester Beach Scheide

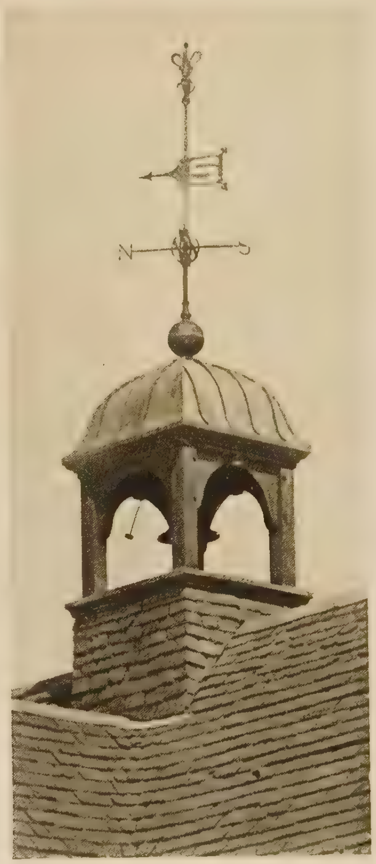




George A. Mills and Campbell Voorhees



James W. O'Connor



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Roger H. Bullard

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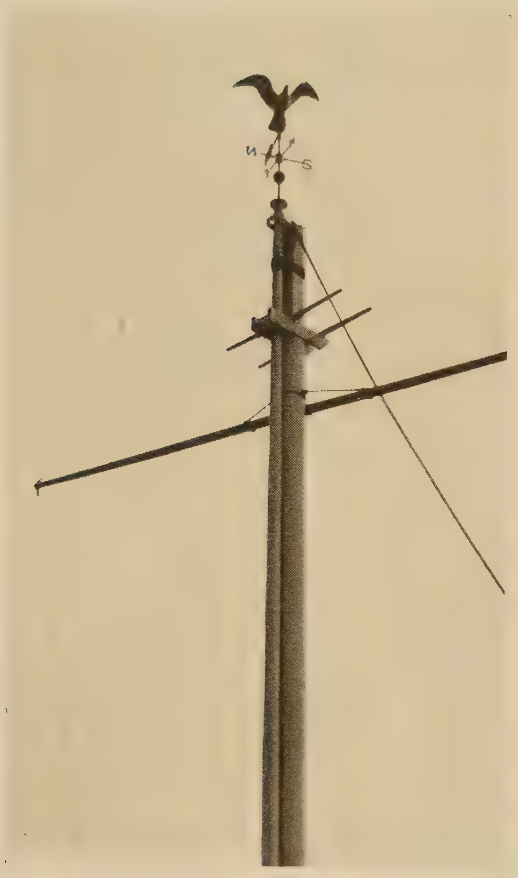
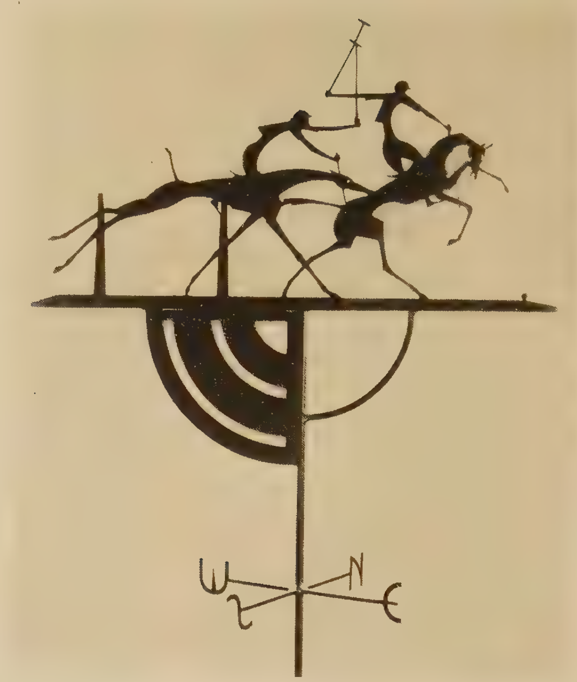


Memorial Flagpole, Larchmont, N.Y.



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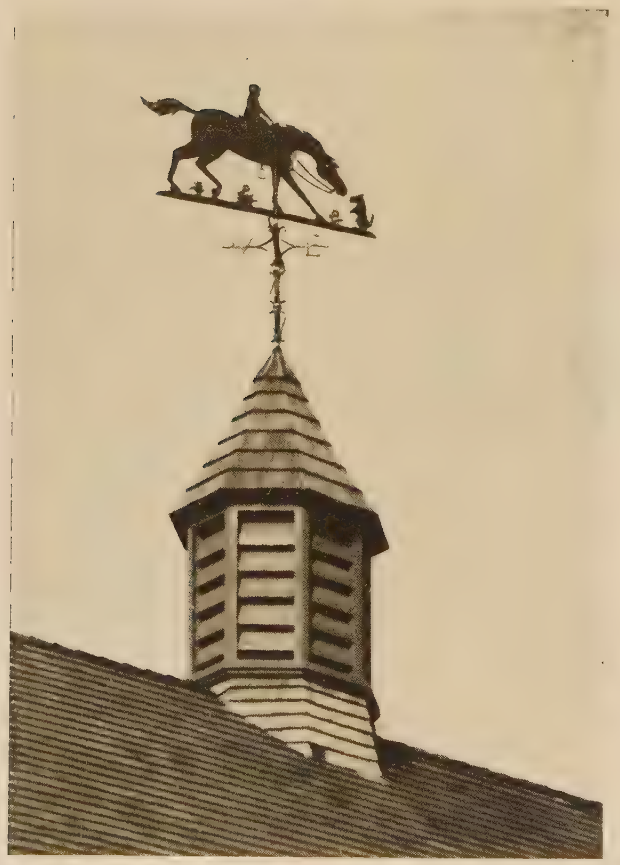
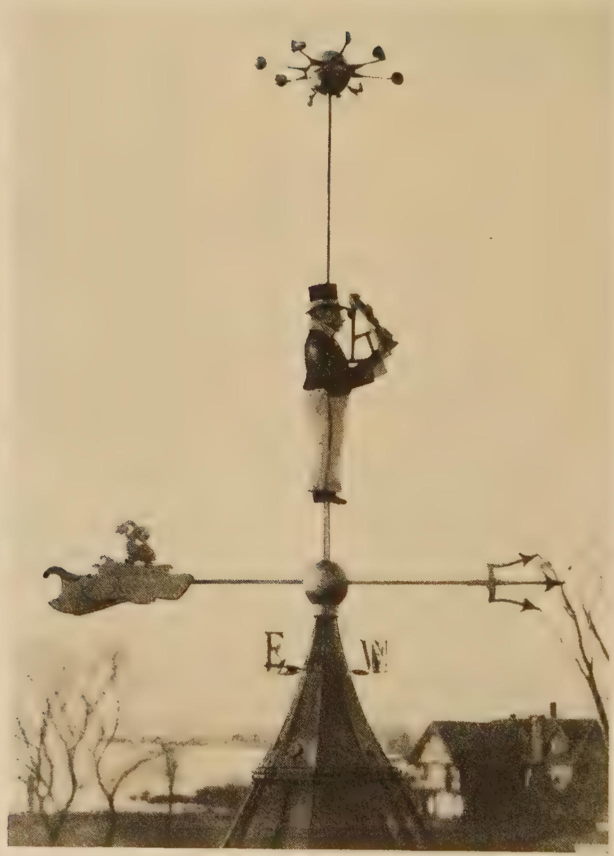
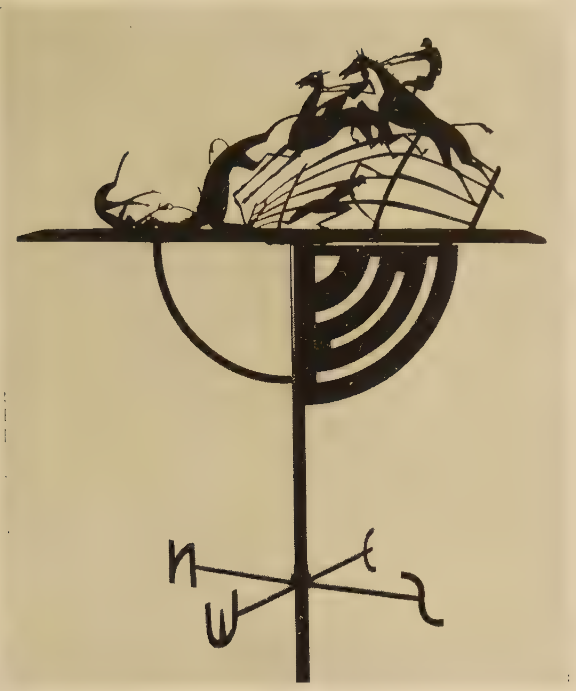


Lucian E. Smith



Charles B. King



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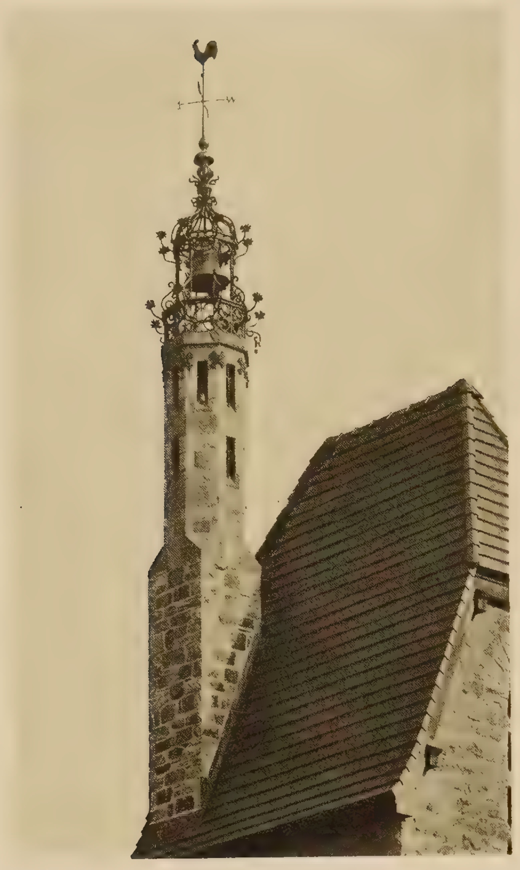
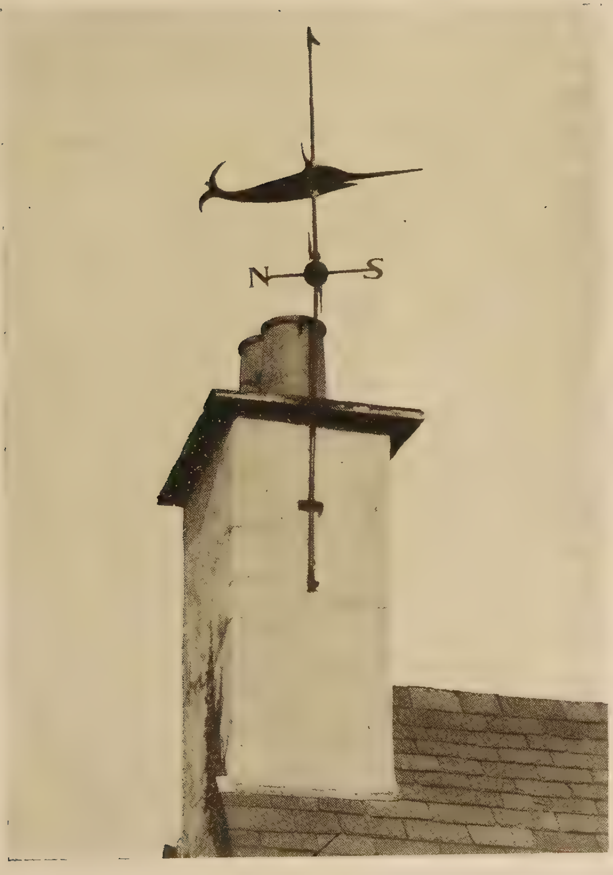


Grosvenor Atterbury



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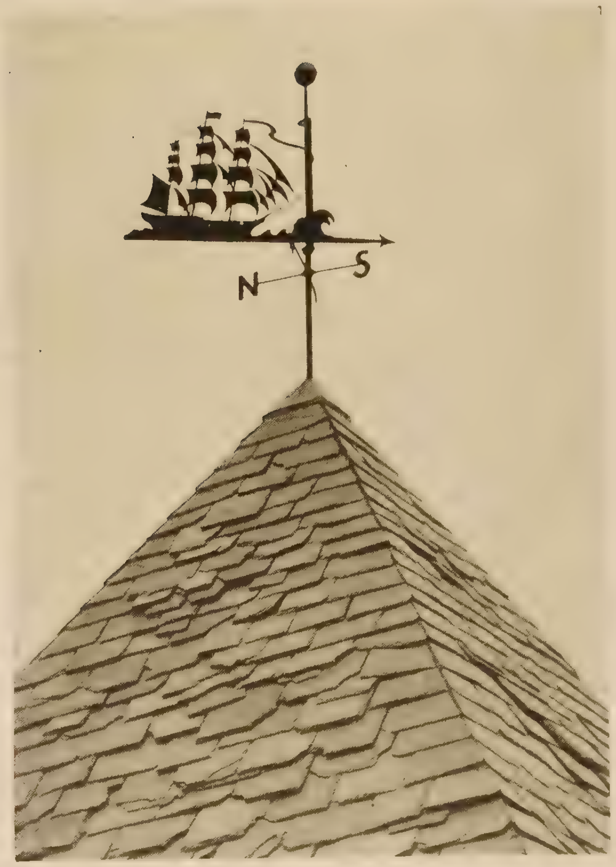
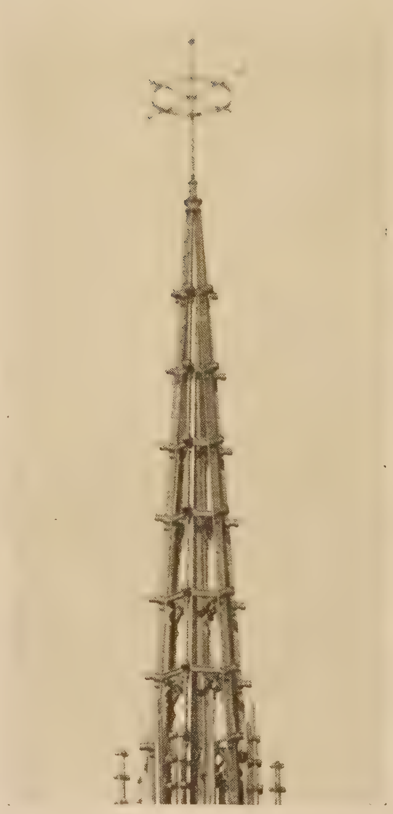


Olive F. Tjaden

Meyer & Mathieu

Todhunter, Inc.

J. W. Ames & E. S. Dodge



Aymar Embury II

George M. Bartlett

Edward Shepard Hewitt

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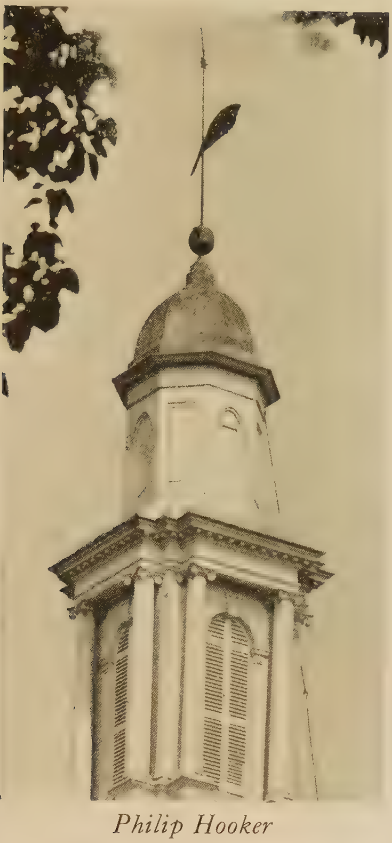
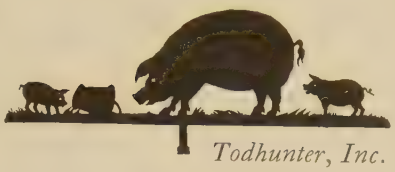


Philip Hooker



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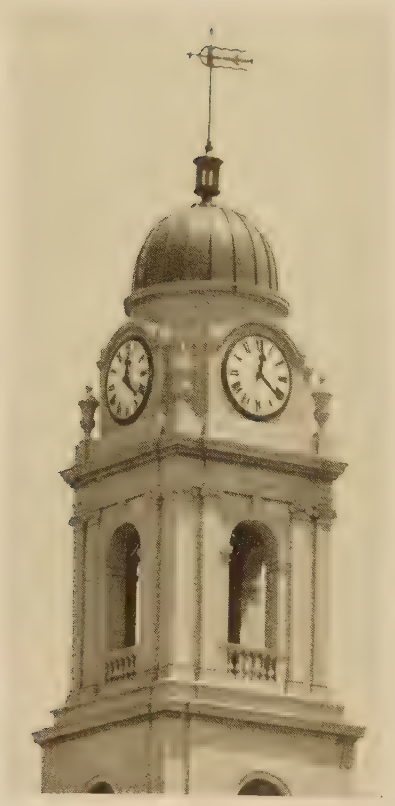
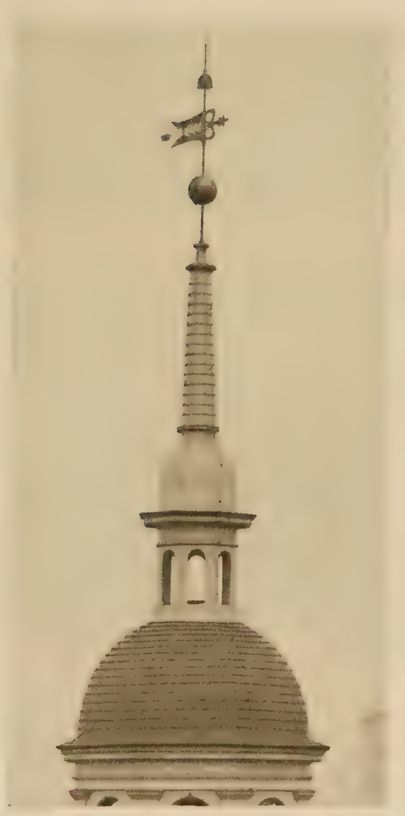
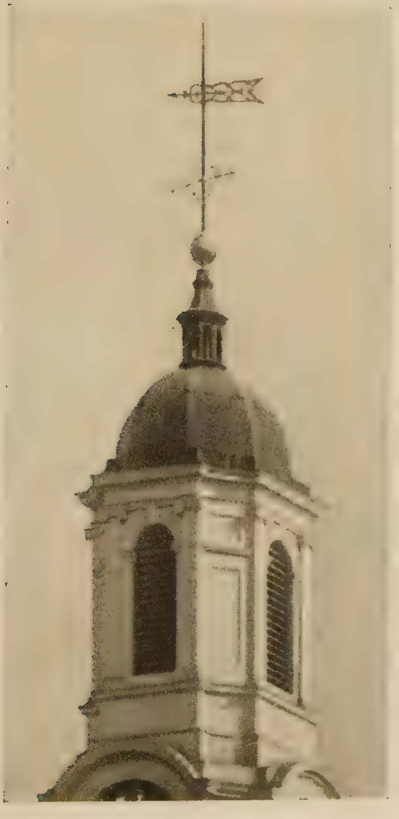


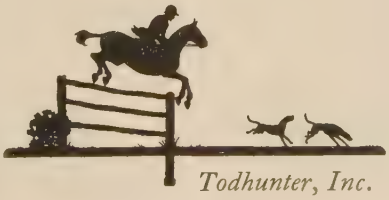
J. H. Ely & W. C. Ely



Independence Hall, Philadelphia

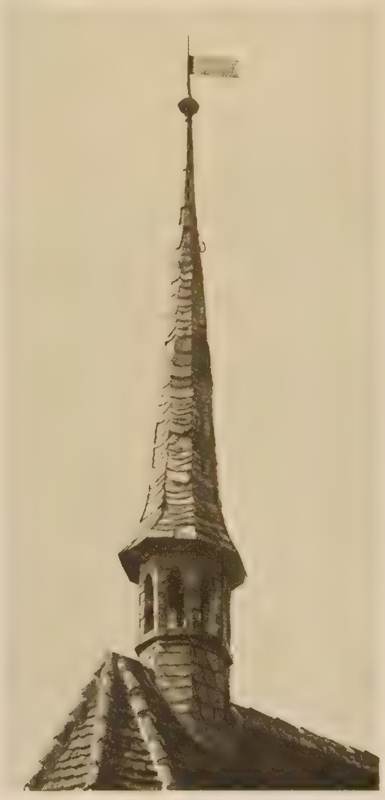
Guilbert & Betelle

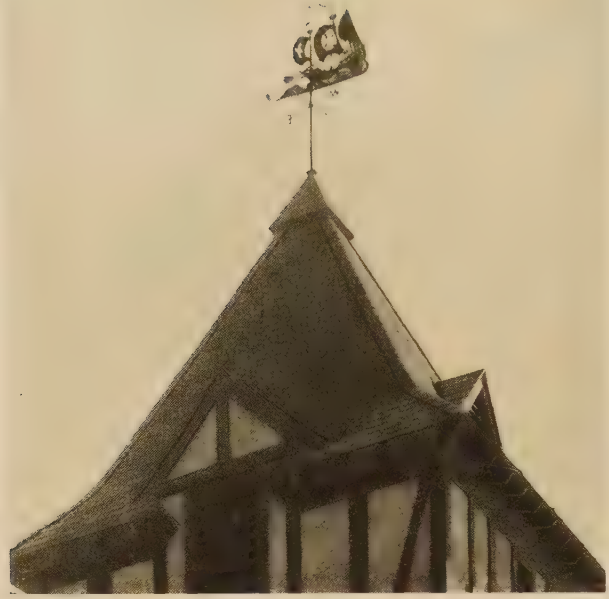




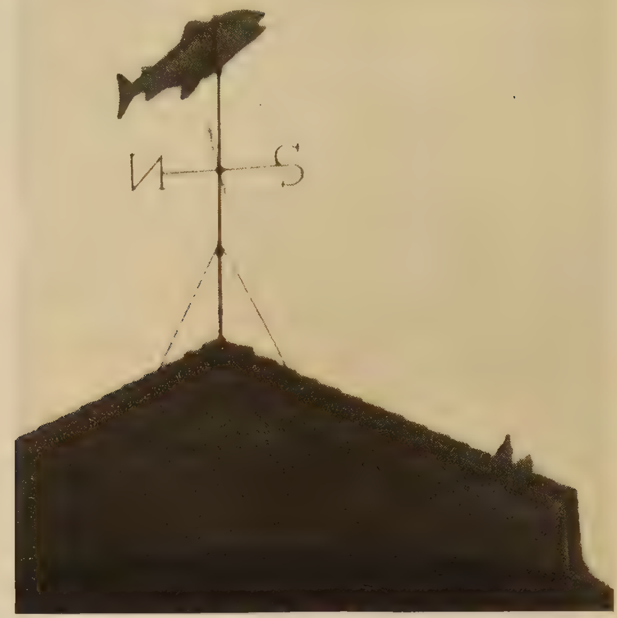
Todhunter, Inc.

Church, Southern Germany



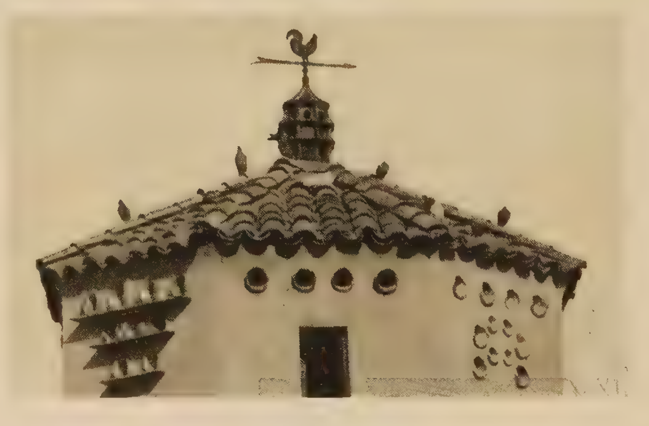


Kenneth M. Murchison

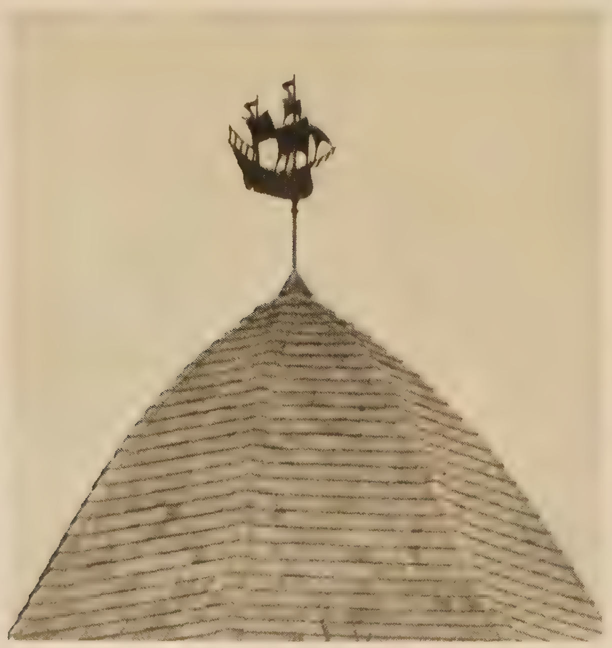


On an old mill,
Basking Ridge, N. J.

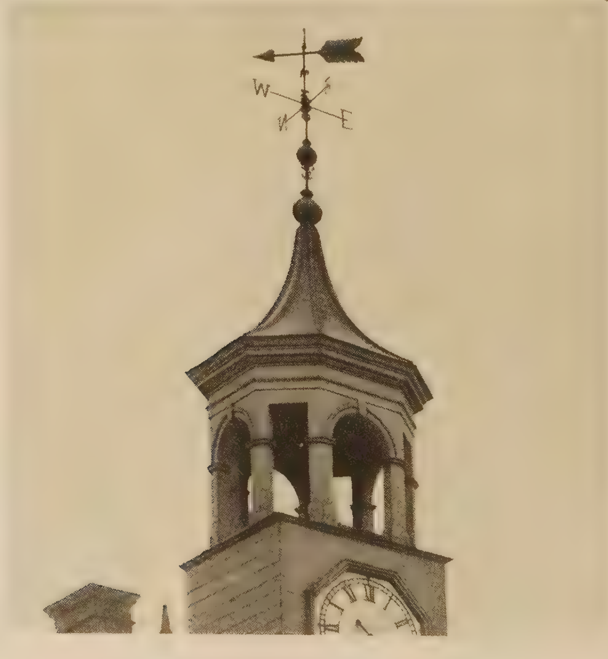
Roy Seldon Price

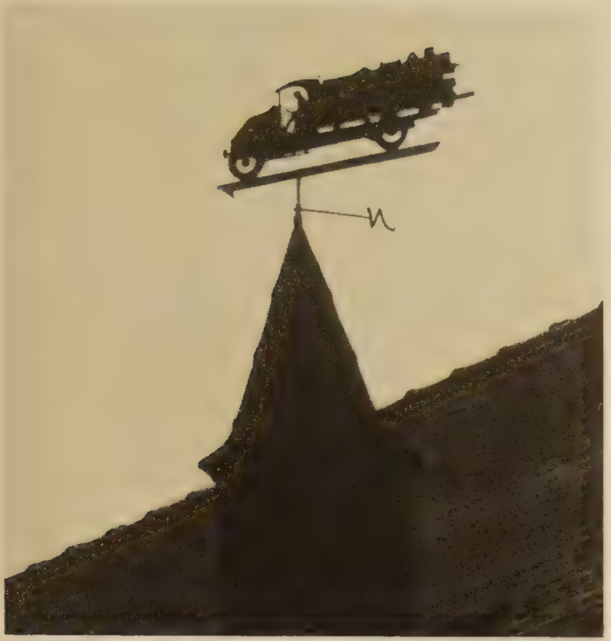


Katharine C. Budd



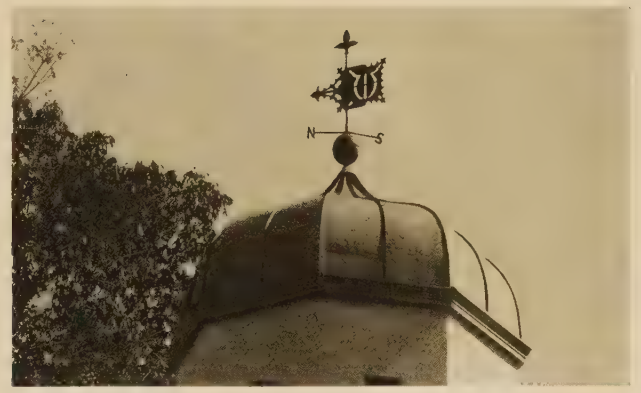
The New Hall,
Ampthill, Bedfordshire





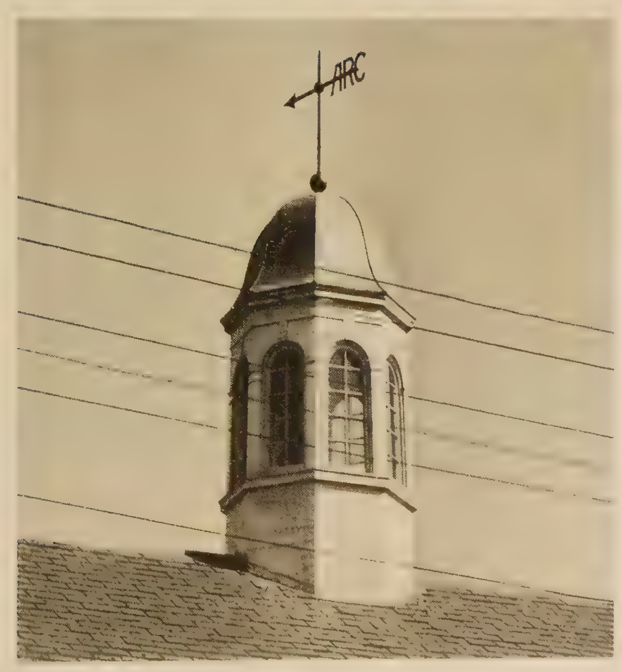
Mount Vernon, N. Y.

Guilbert & Betelle

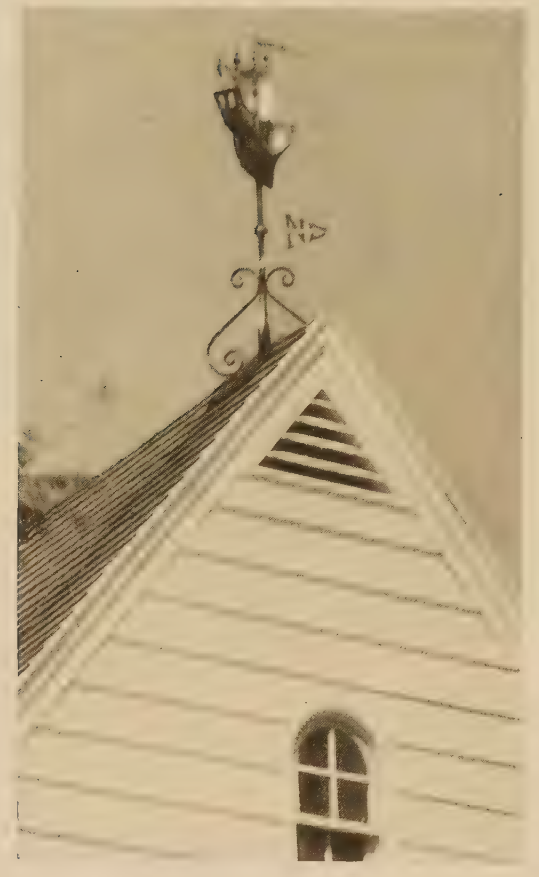


Michael Stillman;
James R. Marsh

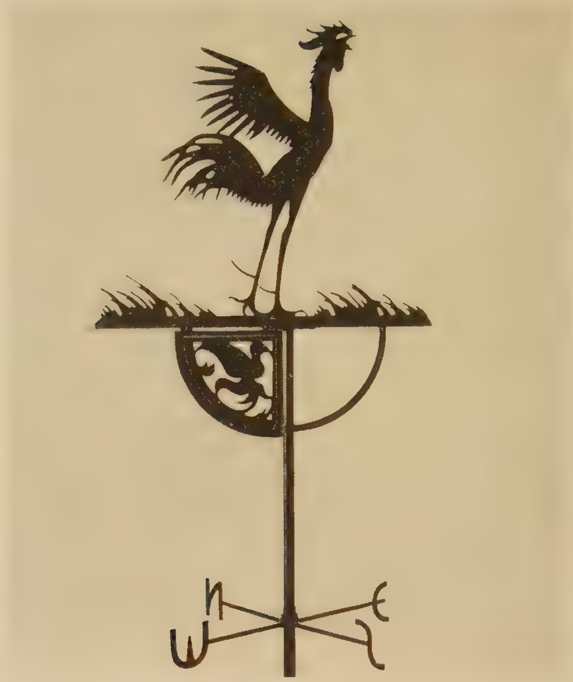
Delano & Aldrich



Benjamin Proctor



Thomson & Swain



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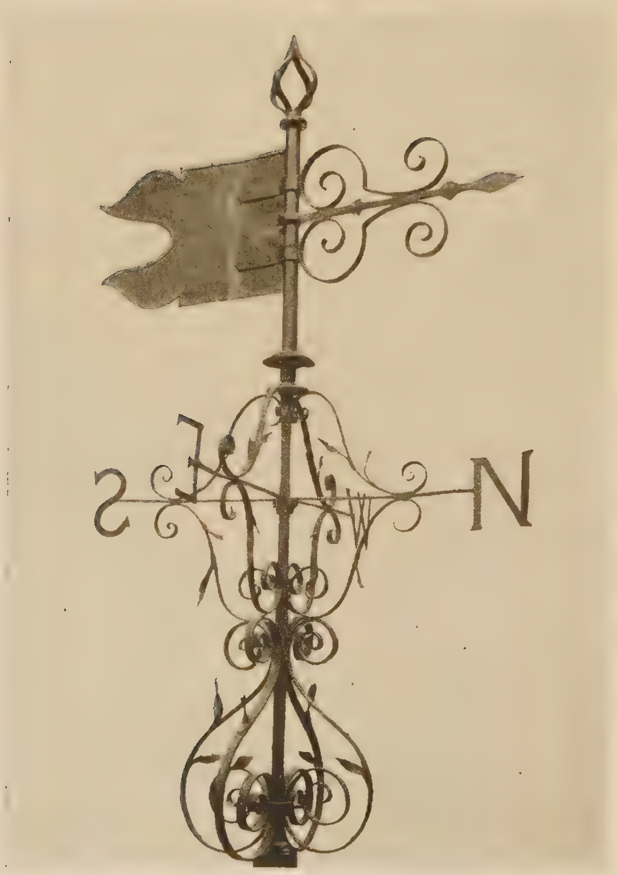
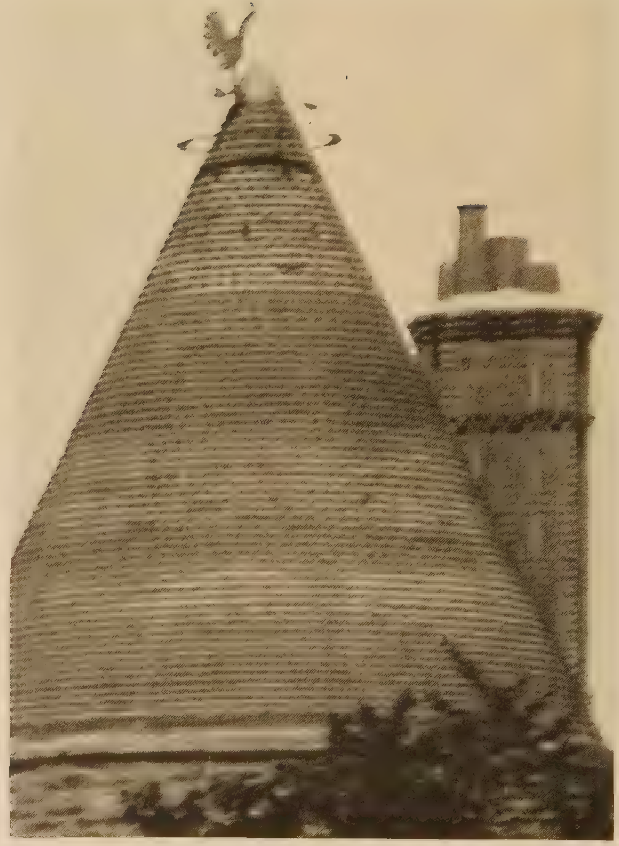
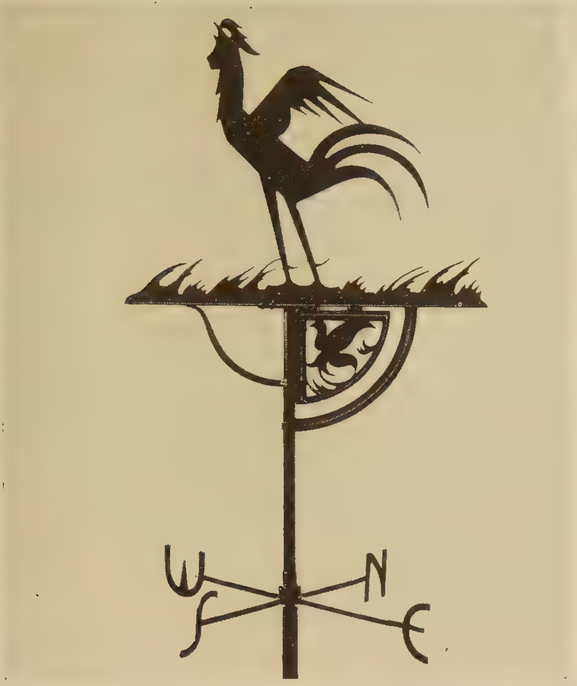


English, eighteenth century, in the Victoria and Albert Museum, London



Mellor, Meigs & Howe



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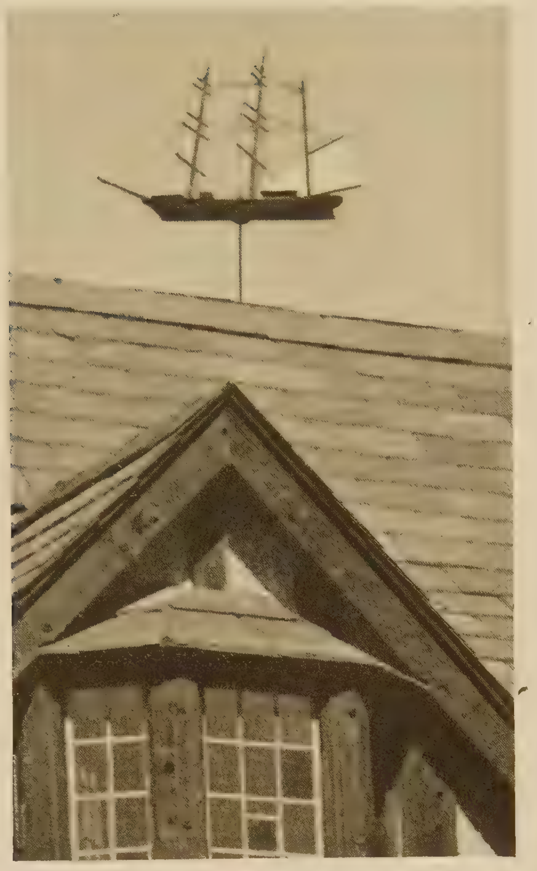
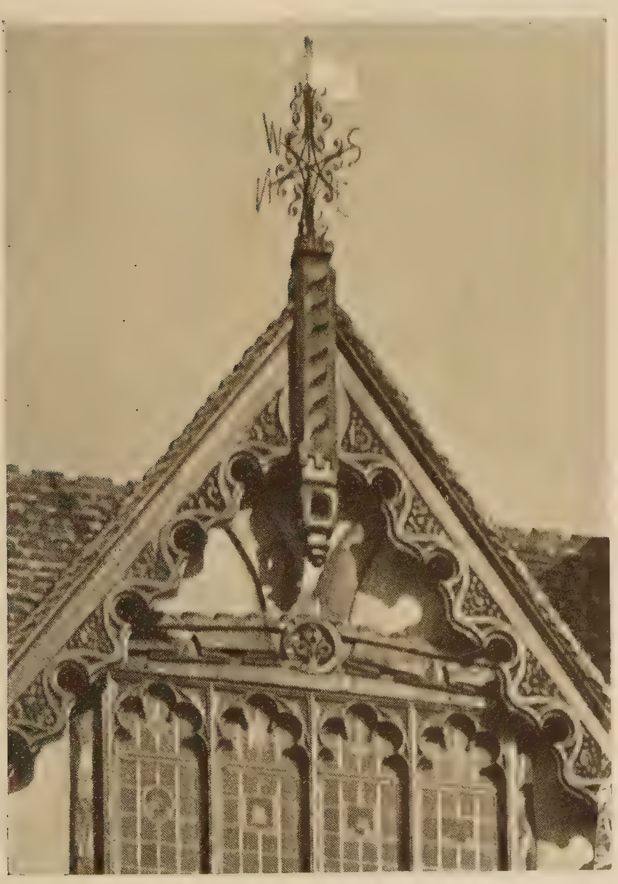
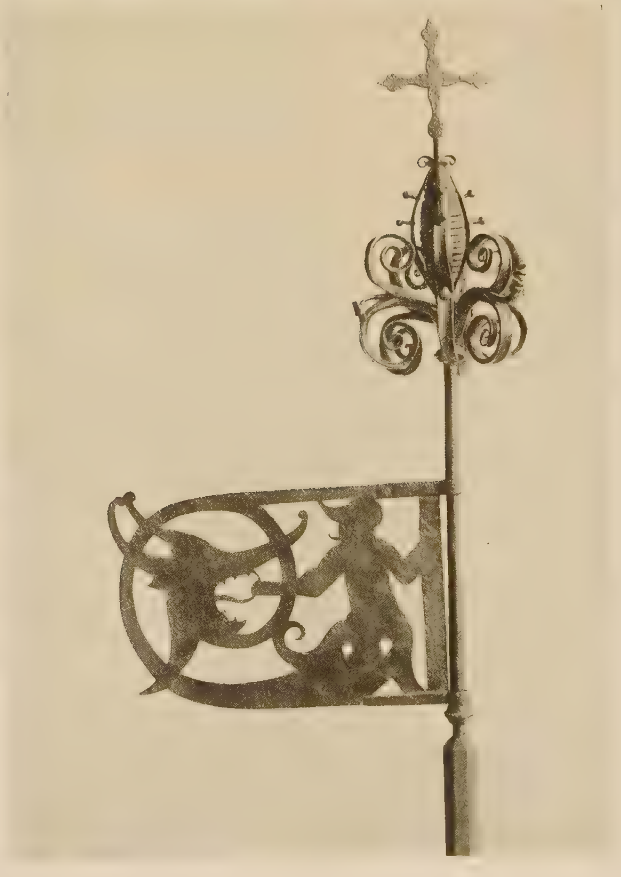


Henry G. Morse



Arthur Todhunter



German, seventeenth century, in the Victoria and Albert Museum, London

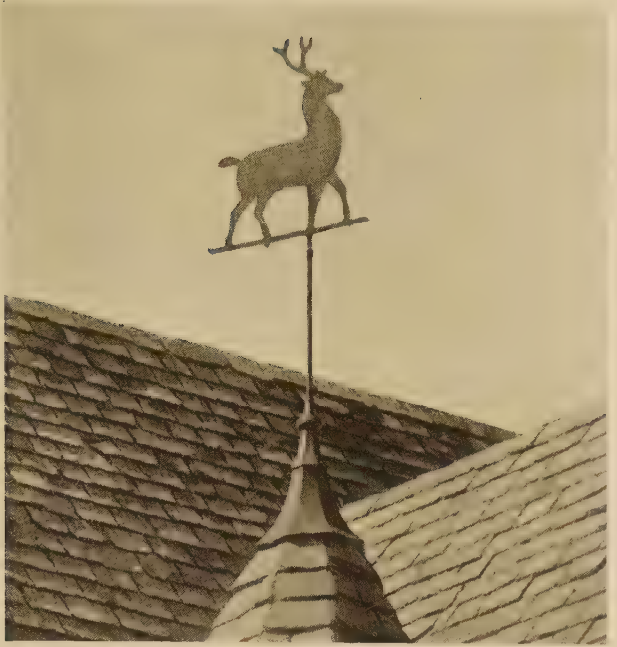
Warren & Wetmore

Frederick Lee Ackerman

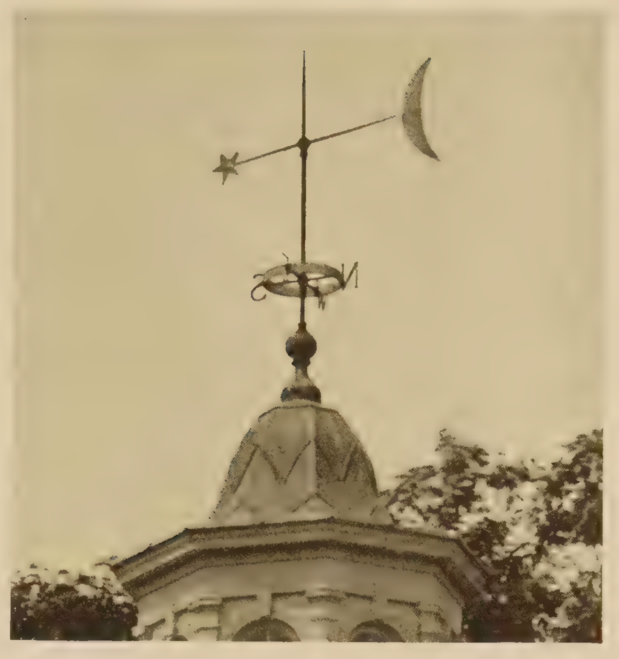
Carl Jules Weyl

Wilson & Merrill

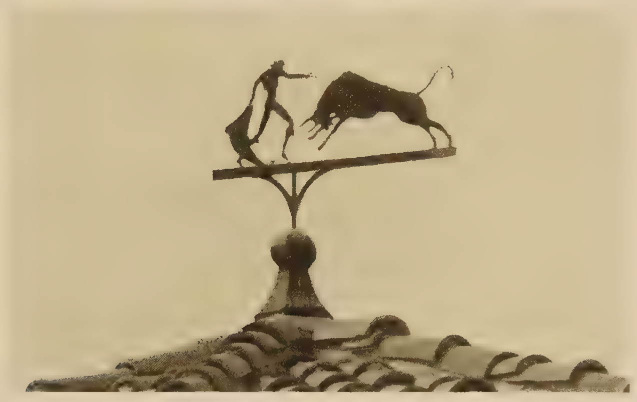
Carl Jules Weyl



Delano & Aldrich



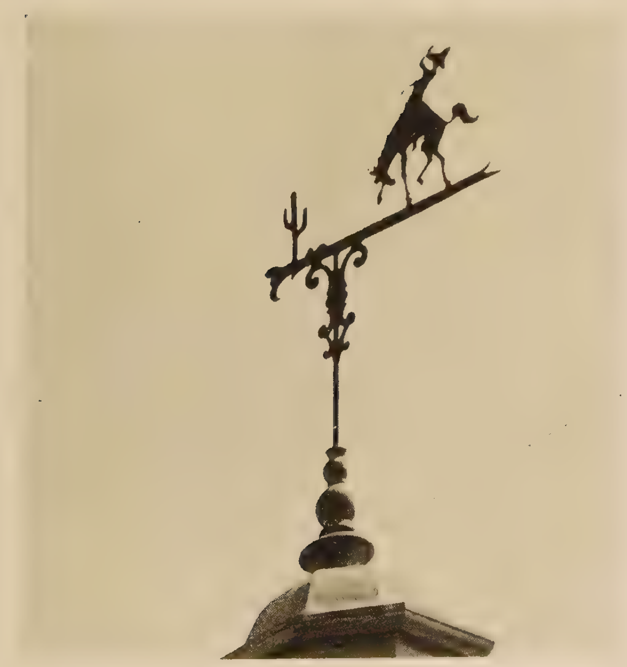
Delano & Aldrich

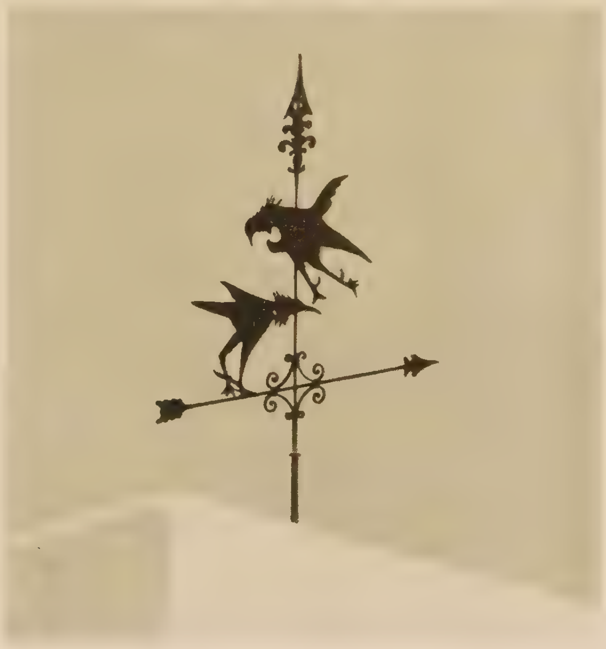


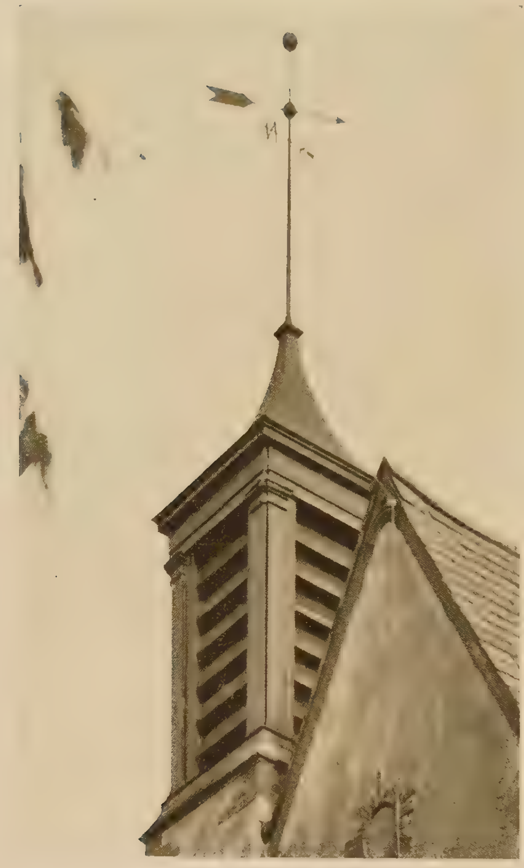
Beverly Hills, Calif.

Gable & Wyant

Beverly Hills, Calif.

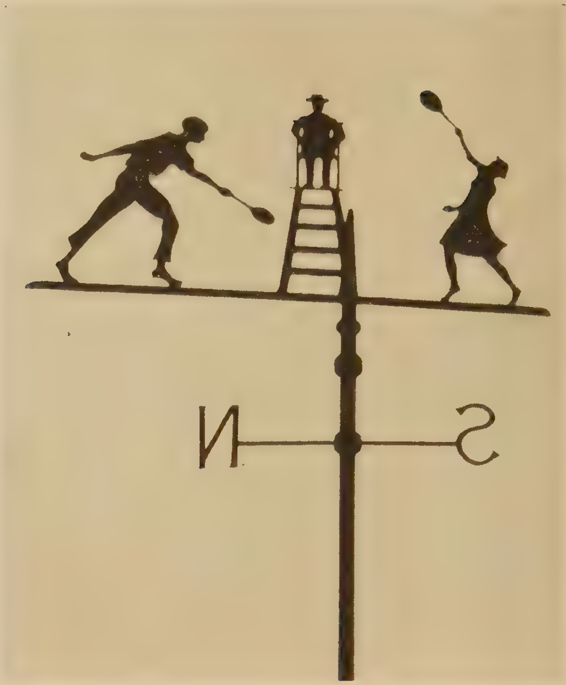


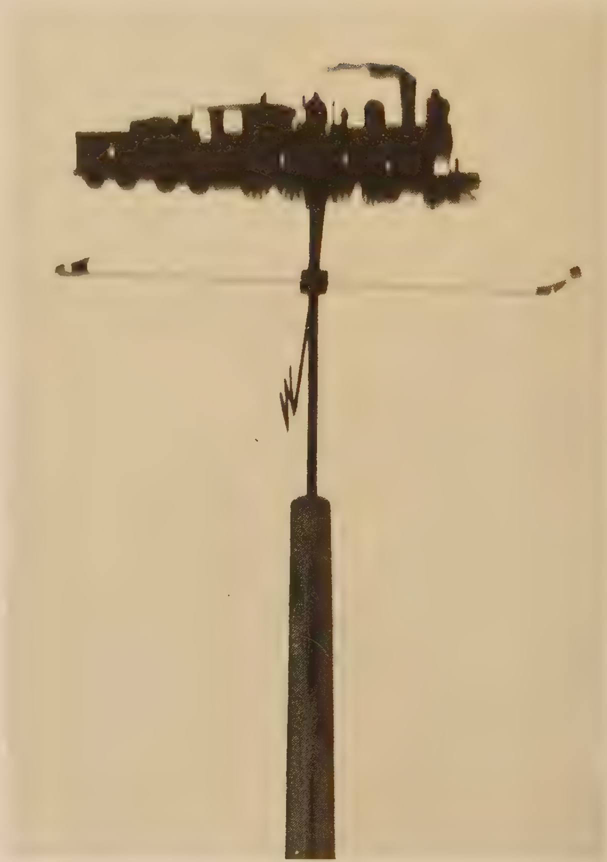




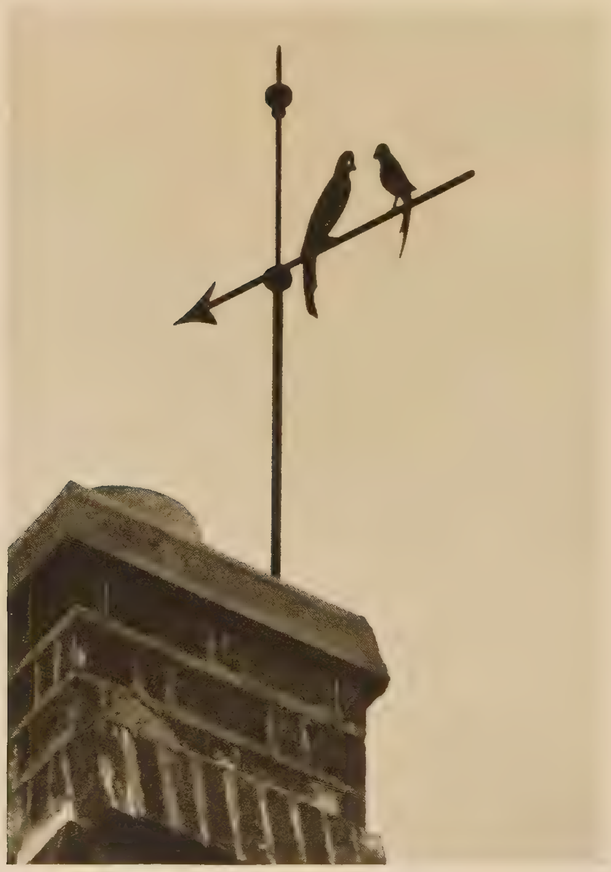
Schenck & Williams

Grosvenor Atterbury, John Tompkins, associated

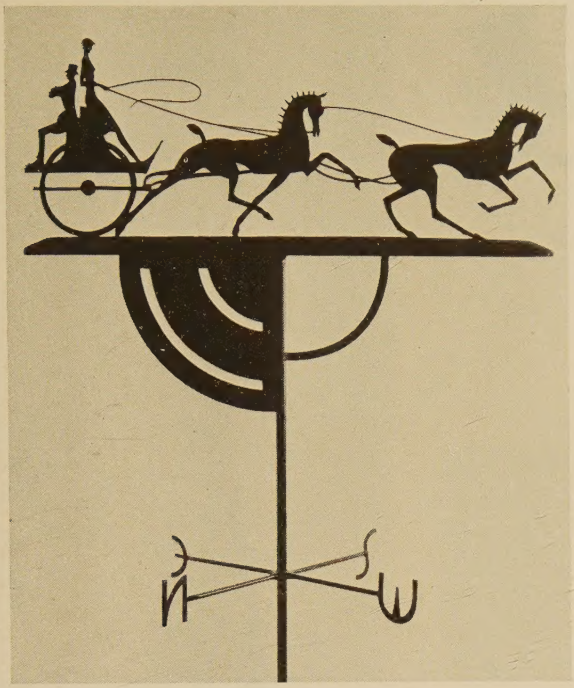




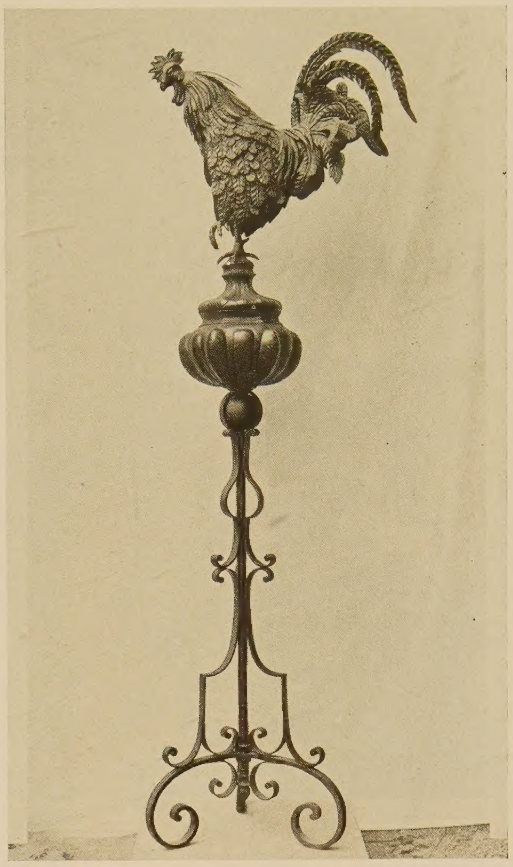
On a railroad men's club house



Harry Grattan



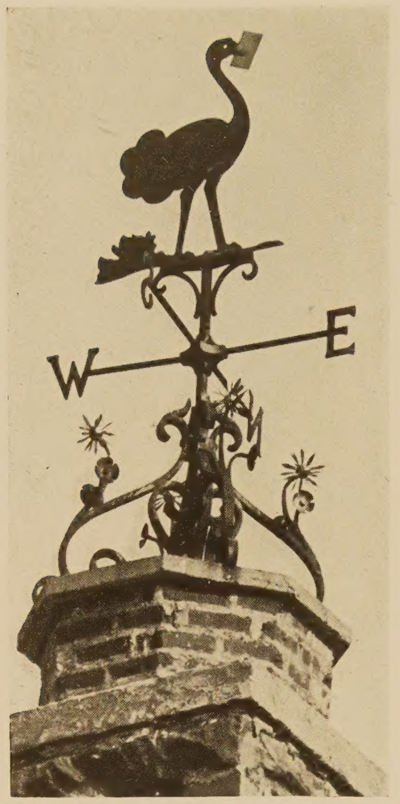
Perin's, Ltd.



French, eighteenth century, in the Victoria and Albert Museum, London

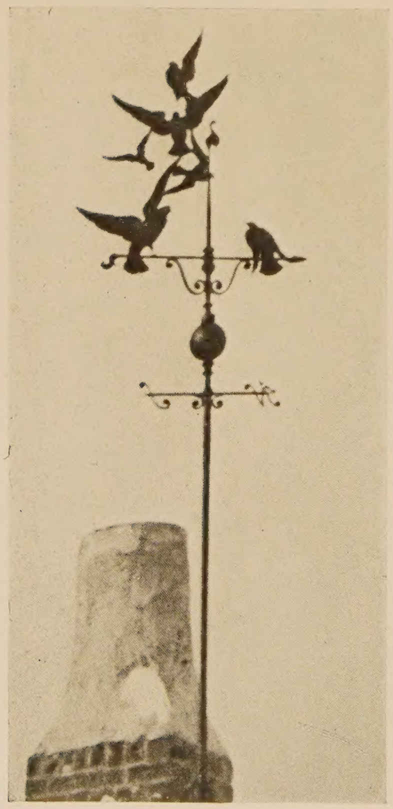
McKim, Mead & White

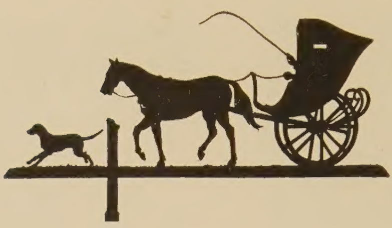
Garden City, Long Island



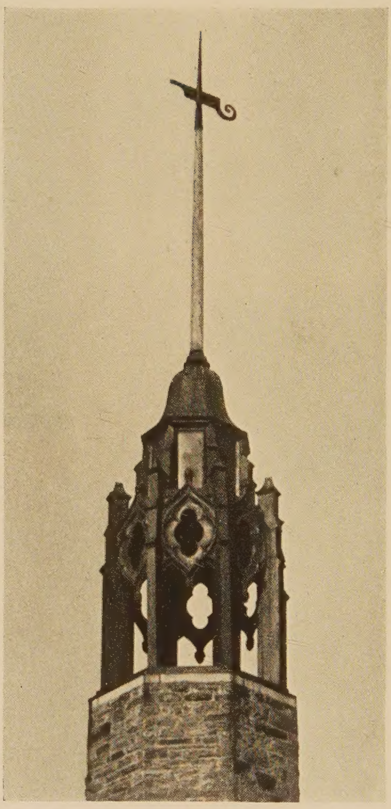
Edward F. Fanning

Bernhardt E. Muller



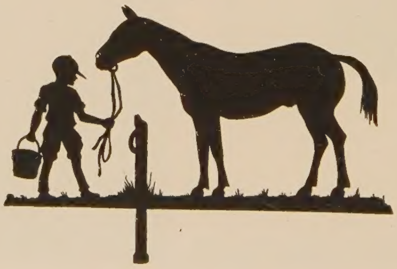


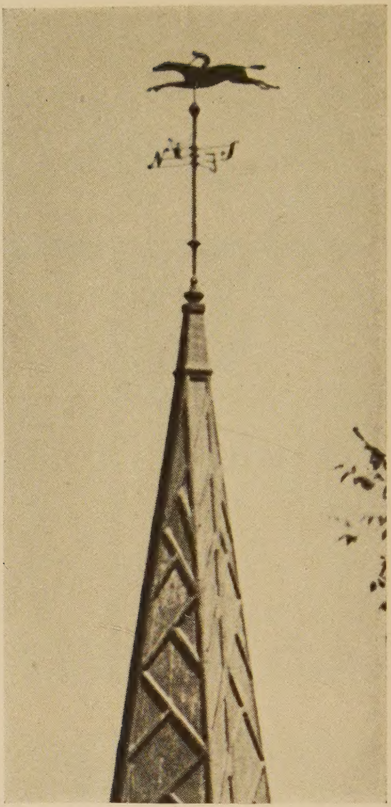
Todhunter, Inc.



Office of John Russell Pope

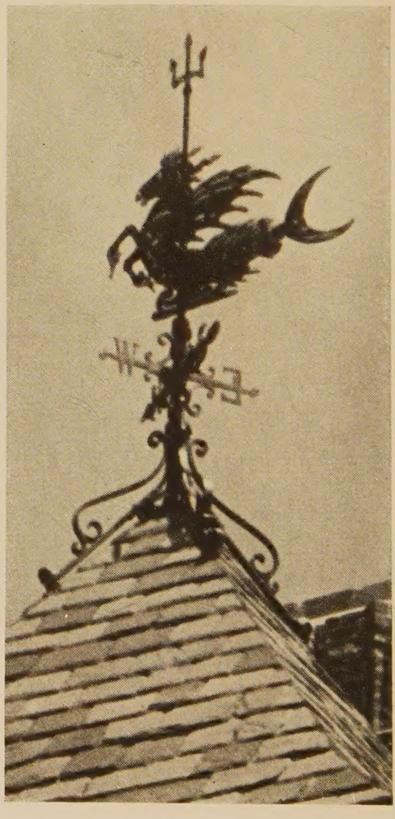
Todhunter, Inc.

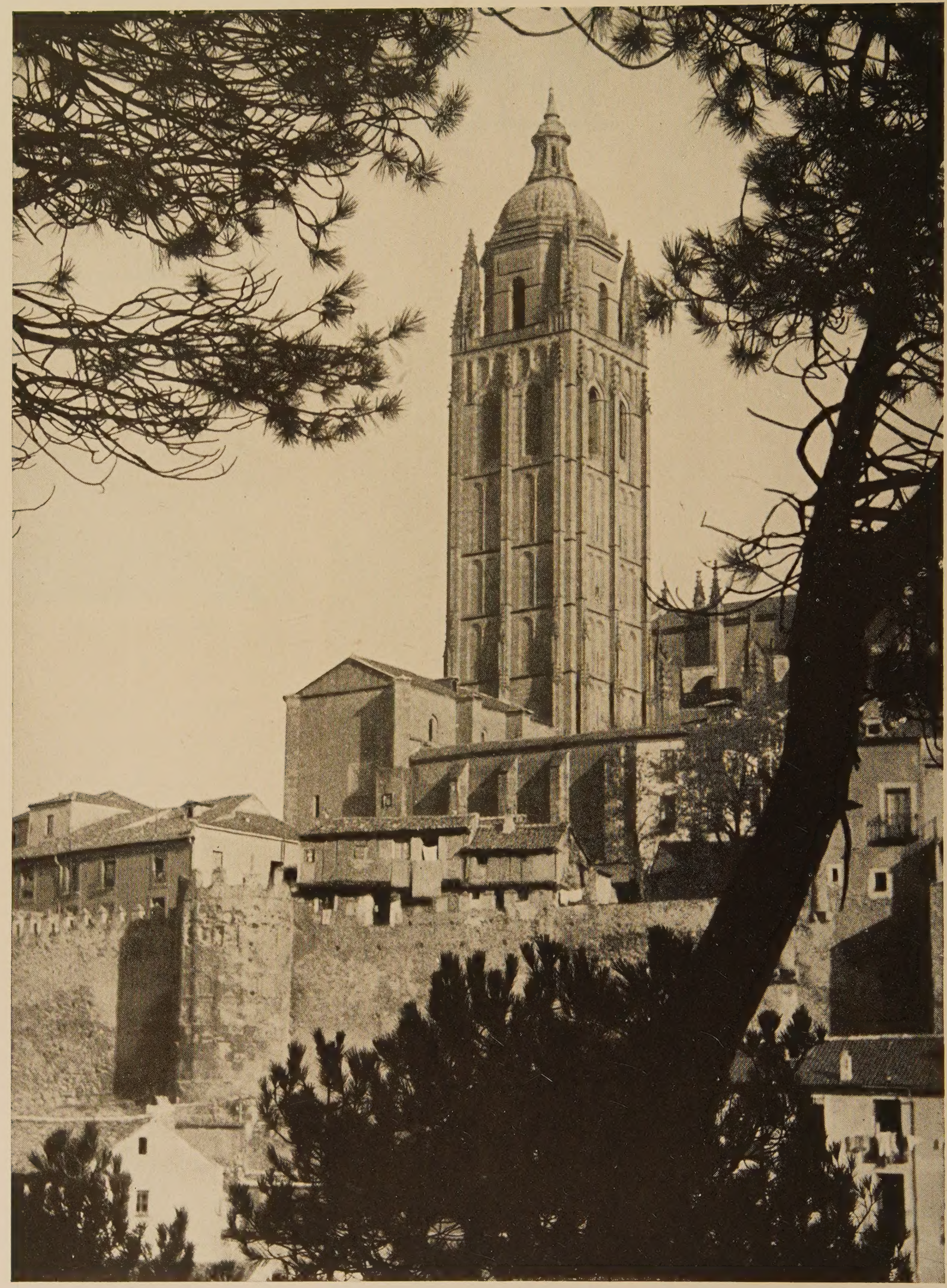




Walker & Gillette

Frank P. Whiting





The Cathedral at Segovia

From a photograph by Joseph B. Wertz